

Service Manual

• KEH-M5000QR/ES



ORDER NO.
CRT 1236

MULTI-CD CONTROL FM/MW/LW TUNER AMPLIFIER

KEH-M5000OSDK

WG

KEH-M5000B EW

MULTI-CD CONTROL FM/AM TUNER DECK AMPLIFIER

KEH-M5000QR ES

Note:

- See the service manual KEX-M800 (CRT1234) for the cassette mechanism description.

- Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.

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EK JULY 1989 Printed in Japan

7. ADJUSTMENT

- Connection Diagram

NOTICE:

Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.

Z: Output impedance of SSG.

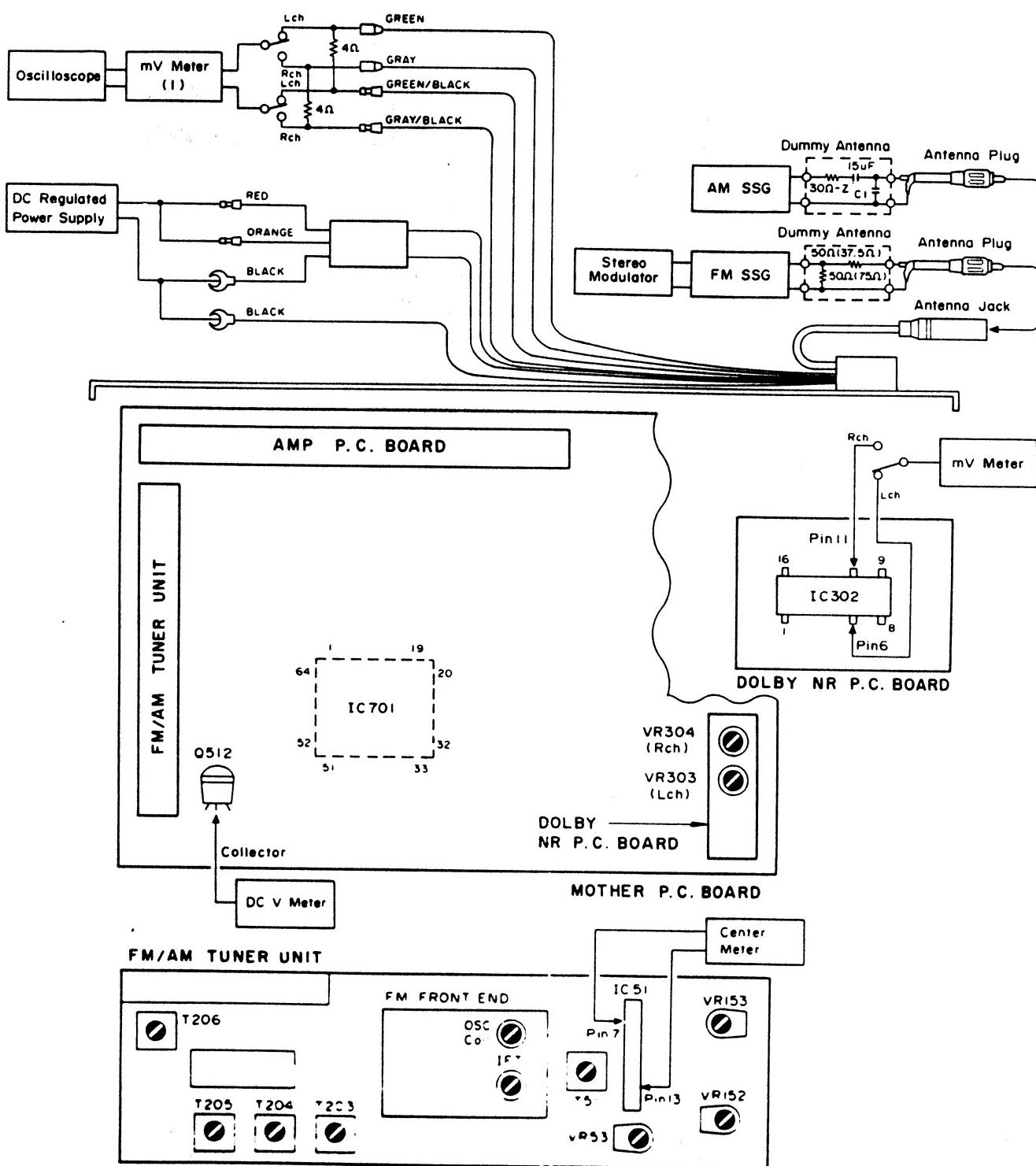


Fig. 1

DOLBY NR LEVEL ADJUSTMENT

No.	Cassette Tape	Adjusting Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz, 200nwb/m)	VR303 (Lch), VR304 (Rch)	mV Meter:-7.2dBs±1dB (Dolby NR Switch:OFF, METAL Switch:OFF)

MW/LW ADJUSTMENT (KEH-M5000SDK/WG, KEH-M5000B/EW)

	No.	AM SSG (400Hz, 30%)		Displayed Frequency (kHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (kHz)	Level (dB μV)			
Tuning Volt	1	(MW Mode)		1.602	T203	DC V Meter:Less than 7.0V
	2	(LW Mode)		153		Verify that DC V Meter is more than 2.0V
IF	1	999	20-25	999	T204, T205, T206	mV Meter (1):Maximum

AM ADJUSTMENT (KEH-M5000QR/ES) * (When 9kHz tuning steps)

	No.	AM SSG (400Hz, 30%)		Displayed Frequency (kHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (kHz)	Level (dB μV)			
Tuning Volt	1			1,710 *(1,602)	T203	DC V Meter:Less than 7.0V
	2			530 *(531)		Verify that DC V Meter is more than 2.0V
IF	1	1,000 *(999)	20-25	1,000 *(999)	T204, T205, T206	mV Meter (1):Maximum

FM ADJUSTMENT * Stereo MOD.: 1kHz, L+R=90%, Pilot=10% *: ES model when tuning step at 200kHz.

	No.	FM SSG (400Hz, 100%)		Displayed Frequency (MHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (MHz)	Level (dB μV)			
Tuning Volt	1			108.0 *(107.9)	OSC Coil (FM Front End)	DC V Meter:7.0V
	1	98.1 Unmodulated	60	98.1	T51	Center Meter:0
IF	2	98.1	5	98.1	IFT (FM Front End)	mV Meter (1):Maximum
	1	98.1	60	98.1		mV Meter (1):A dB (This output is A)
Mute	2	98.1	10	98.1	VR53	mV Meter (1):A-3dB
	1	98.1*	60	98.1	VR153	mV Meter (1):Separation Maximum (Stereo Position)
ARC	2	98.1*	35	98.1	VR152	mV Meter (1):Separation 5dB (Stereo Position)

8. DISASSEMBLY

• Removing the Handle Assy

1. Remove the four screws.
2. Press the tabs at four locations indicated by arrows, and then pull out the handle assy.

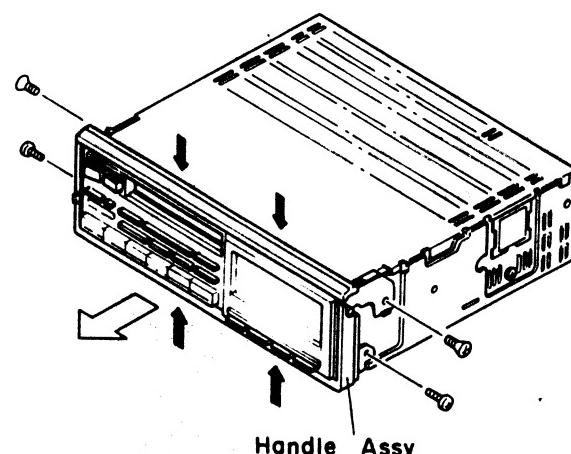


Fig. 2

• Removing the Case

1. Insert and turn a flat screwdriver to remove the case.
2. Raise the case to remove.

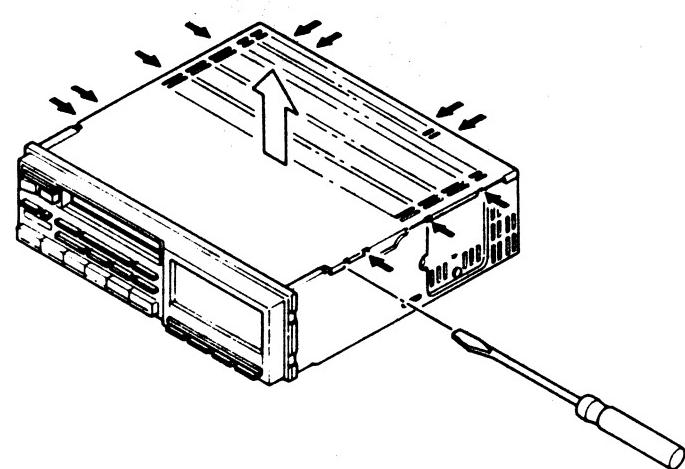


Fig. 3

• Removing the Cassette Mechanism Assy

1. Remove the four screws.
2. Disconnect the mechanism control unit connector.
3. Remove the cassette mechanism assy.

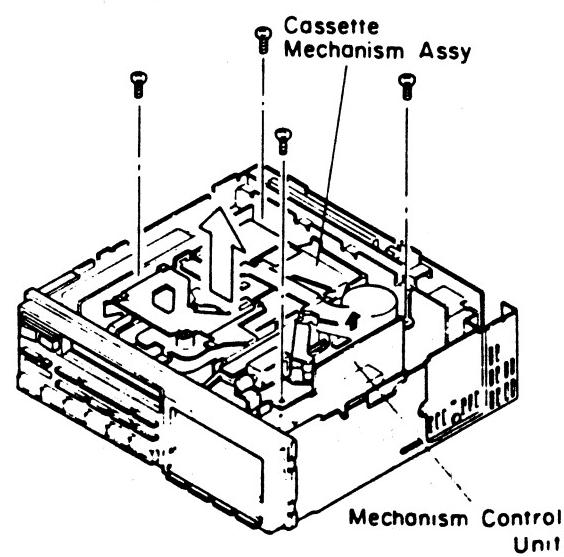


Fig. 4

• **Removing the Grille Assy**

1. Disconnect the two connectors.
2. Press the tabs at three locations indicated by arrows, and then pull out the grille assy.

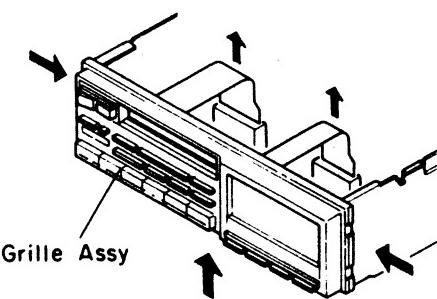


Fig. 5

• **Removing the Tuner Amp Unit**

1. Remove the five screws, and remove the cord assy.
2. Unbend the tabs at three locations indicated by arrows until straight.
3. Remove the solder indicated by arrow A.
4. Disconnect the connector.
5. Raise up on tuner amp unit to remove it from chassis unit.

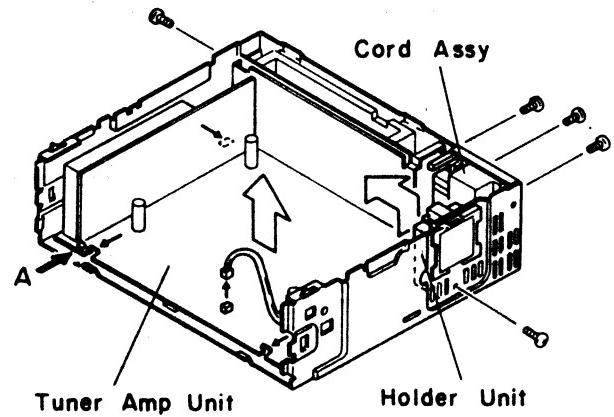


Fig. 6

• **Removing the Dolby NR P.C. Board, Amp P.C. Board and FM/AM Tuner Unit**

1. Remove the solder and unbend the tabs on back of each unit circuit board until straight.
2. Pull out unit as shown in illustration.

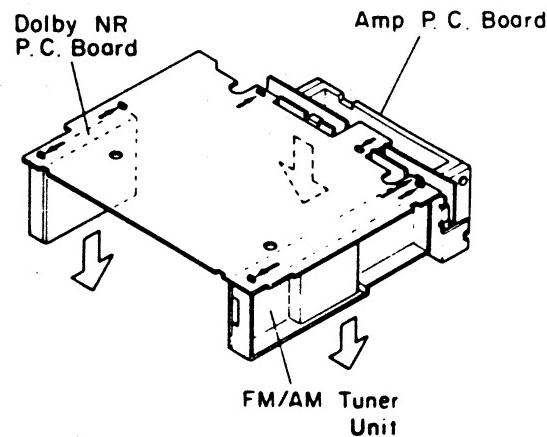


Fig. 7

• Removing the Display Unit

1. Remove the four screws.
2. Press the tabs at four locations indicated by arrows, and then pull out the display unit.

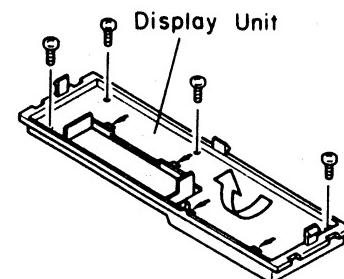


Fig. 8

9. REMOTE CONTROL ASSY (KEH-M5000QR/ES)

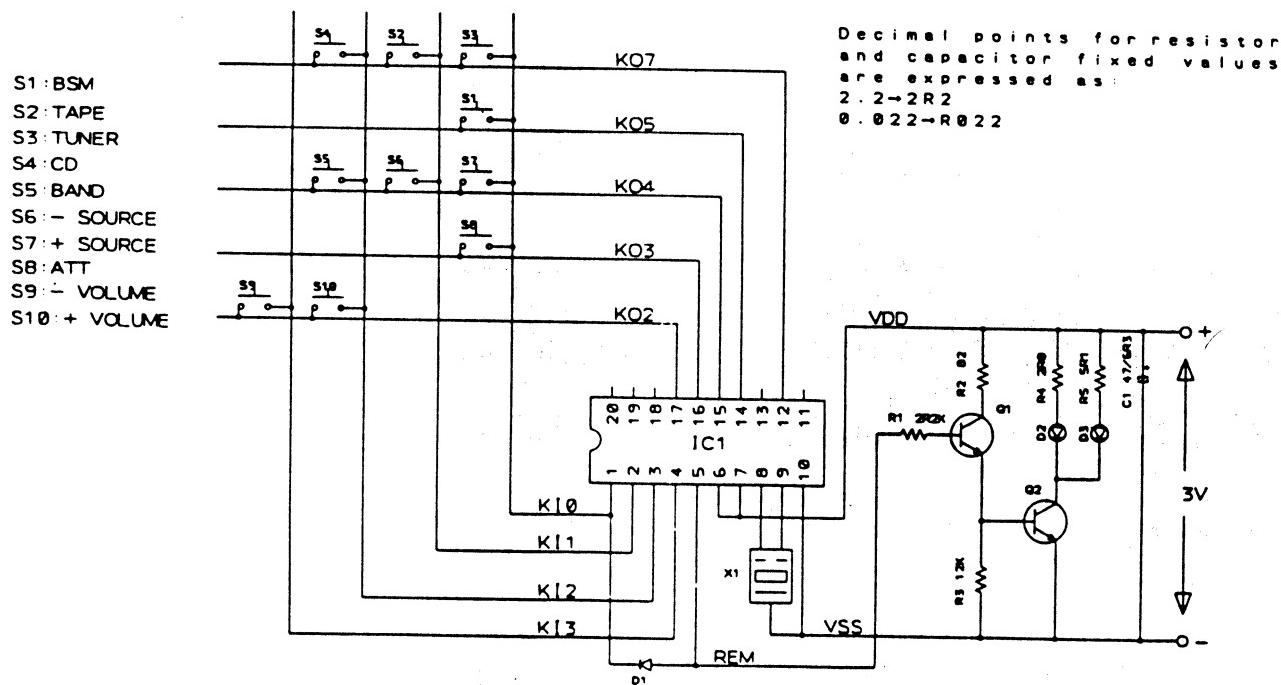
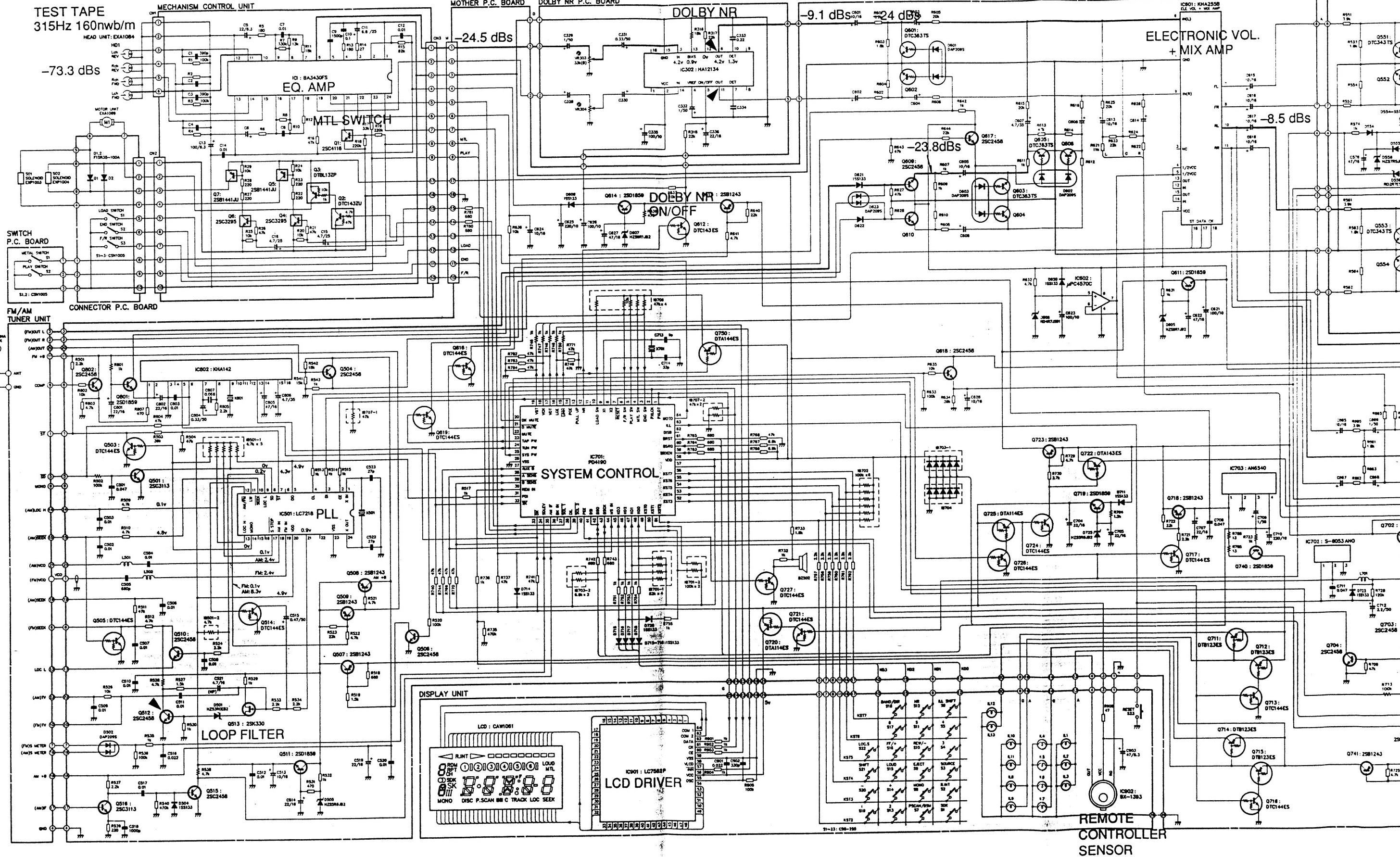


Fig. 9

10. SCHEMATIC CIRCUIT DIAGRAM (KEH-M5000SDK/WG)



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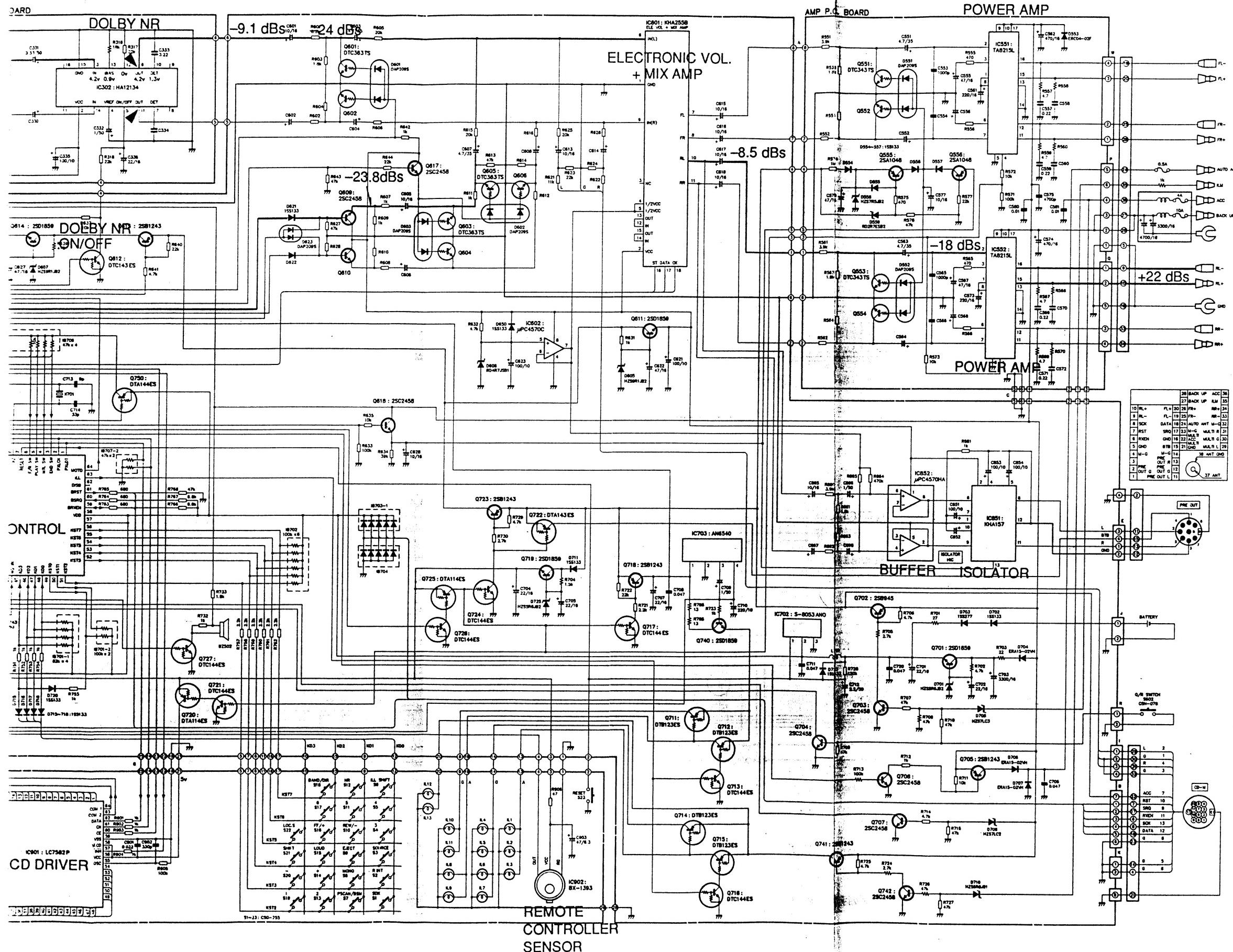
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**SWITCHES:**

- ① SWITCH P.C. BOARD
 - S1: METAL SWITCH ON-OFF
 - S2: PLAY SWITCH ON-OFF
- ② CONNECTOR P.C. BOARD
 - S1: LOAD SWITCH ON-OFF
 - S2: END SWITCH ON-OFF
 - S3: F/R SWITCH ON-OFF

The underlined indicates the switch position.

Tuner Amp Unit

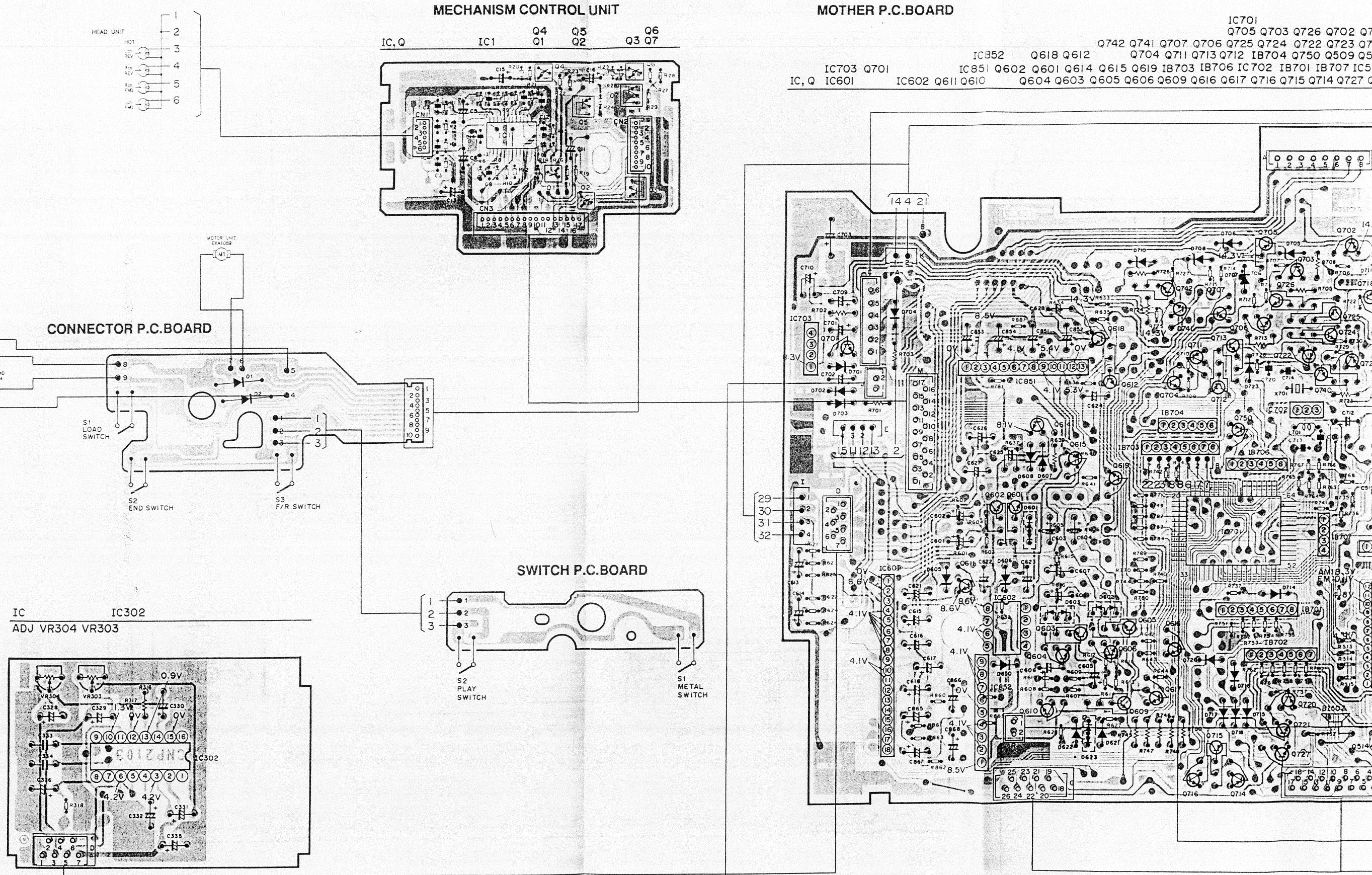
- Consists of
- Mother P.C. Board
 - Amp P.C. Board
 - Dolby NR P.C. Board

NOTE :

- Indicates a chip resistor.
- Indicates a chip capacitor.
- Indicates a chip transistor.
- Indicates a chip diode.

Fig. 10

11. CONNECTION DIAGRAM (KEH-M5000SDK/WG)



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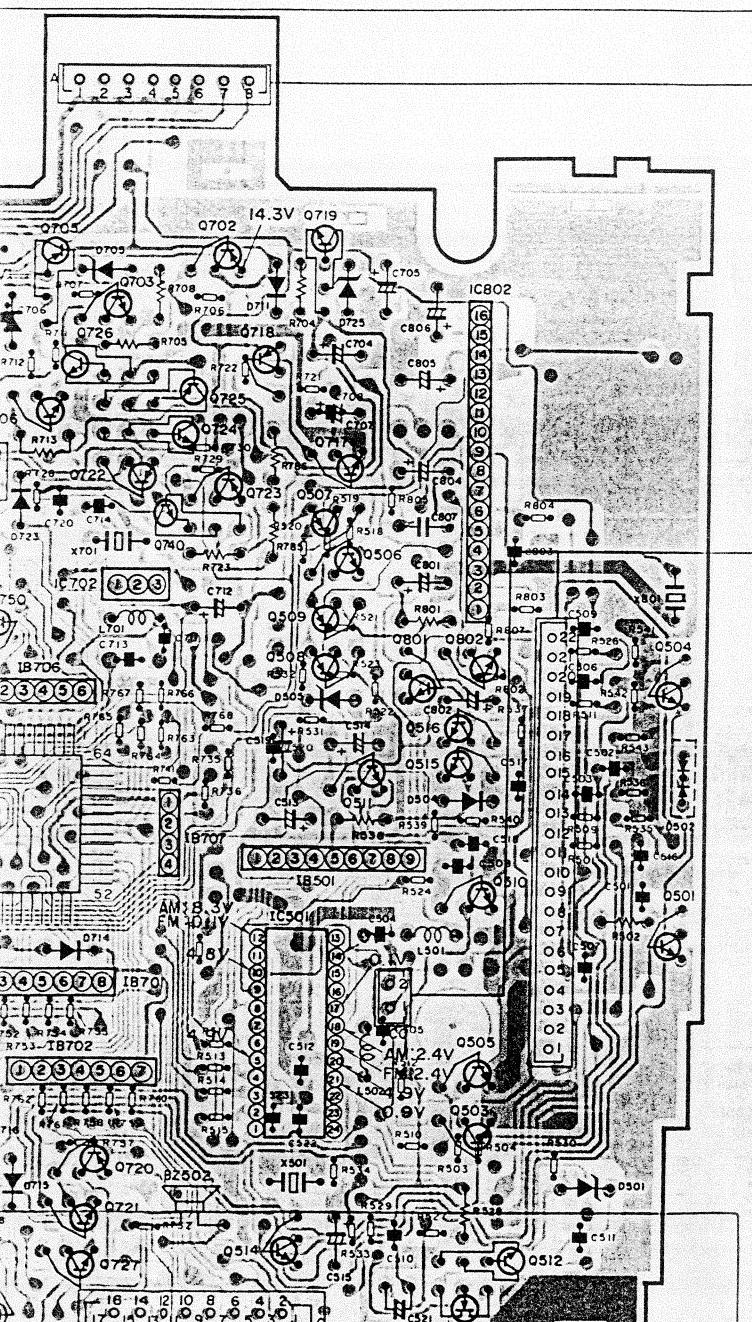
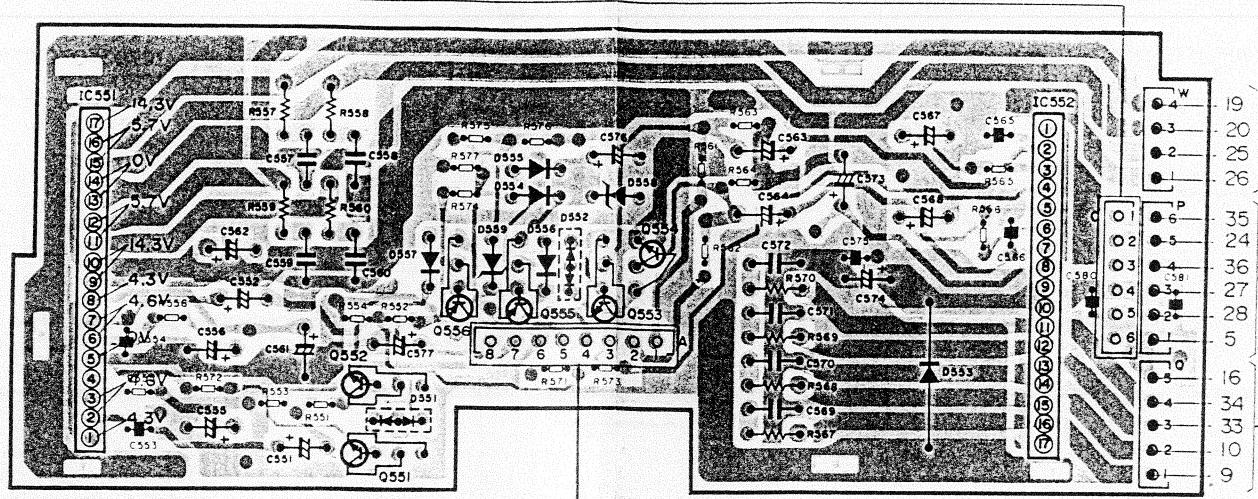
12

AMP P.C.BOARD

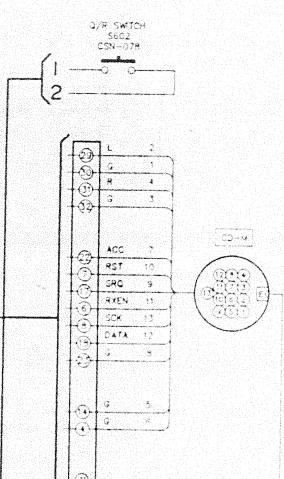
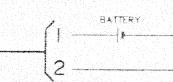
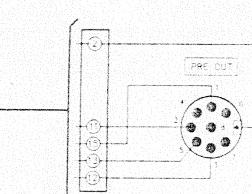
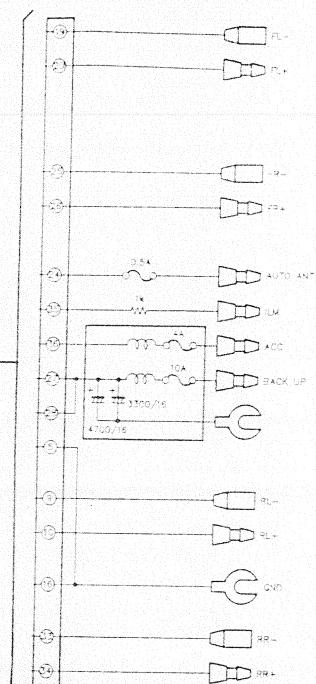
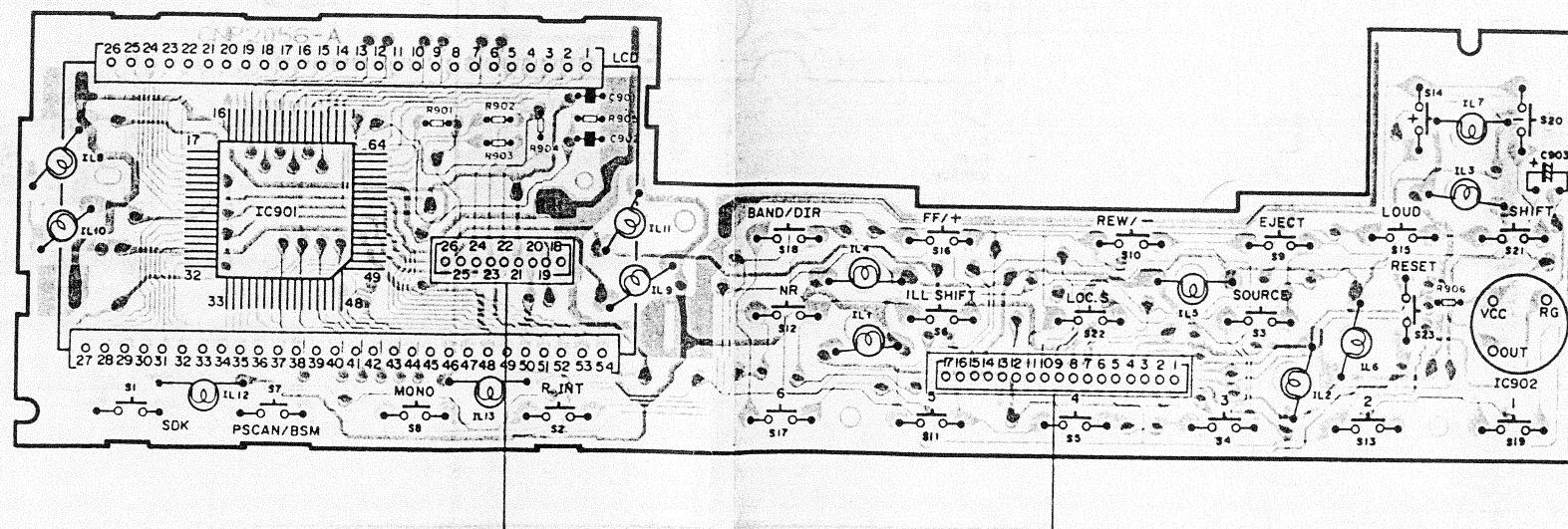
C701
 705 Q703 Q726 Q702 Q718
 725 Q724 Q722 Q723 Q740 Q506 Q507 Q717 Q719 IC802
 12 IB704 Q750 Q509 Q508 Q801 Q802 Q511 Q516 Q515 Q504
 IC702 IB701 IB707 IC501 IB501 Q510 Q503 Q505 Q501
 17 Q716 Q715 Q714 Q727 Q721 Q720 Q514 Q513 Q512

IC, Q IC551 Q551 Q552 Q556 Q555 Q553 Q554

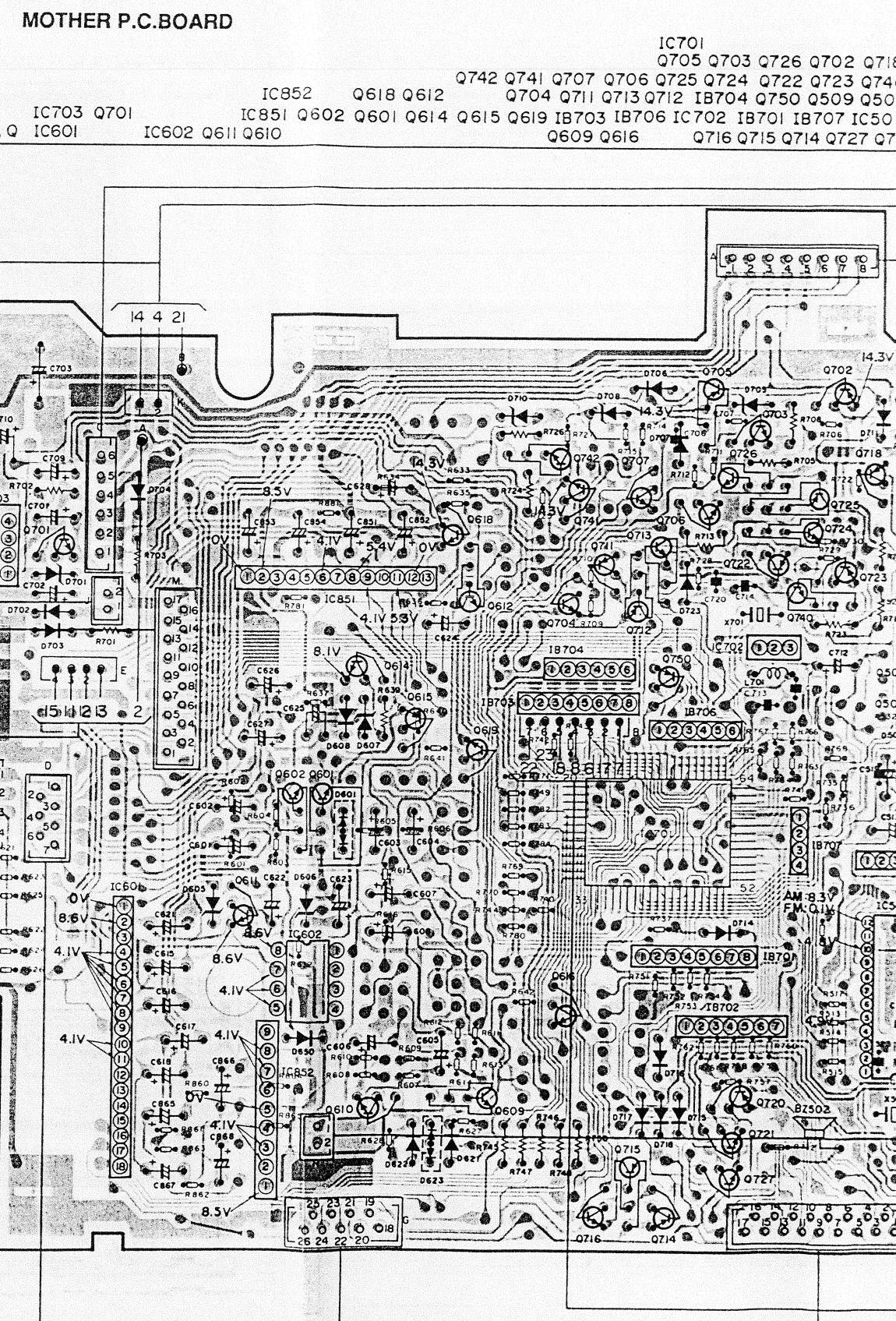
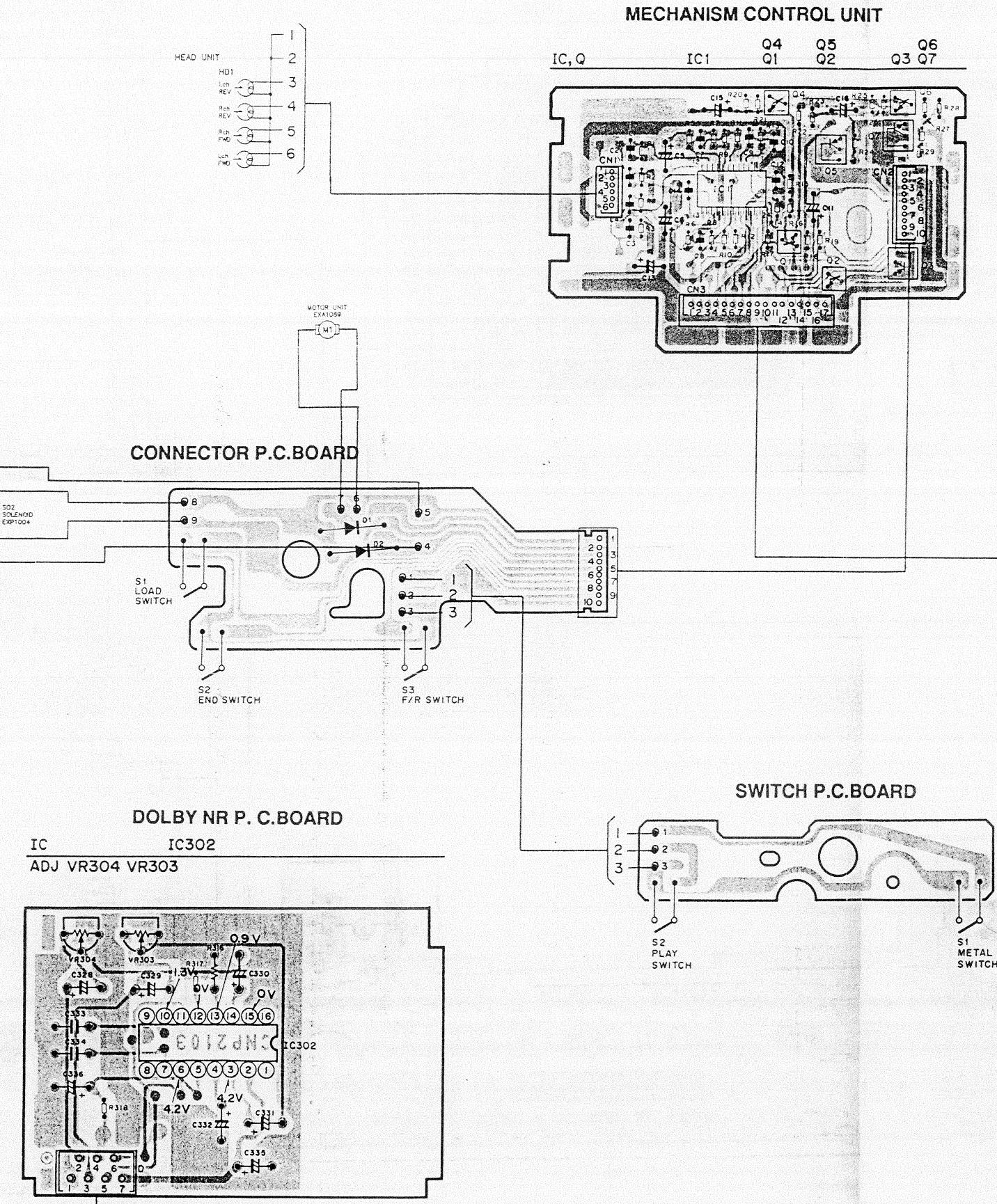
IC552



DISPLAY UNIT



12. CONNECTION DIAGRAM (KEH-M5000B/EW)



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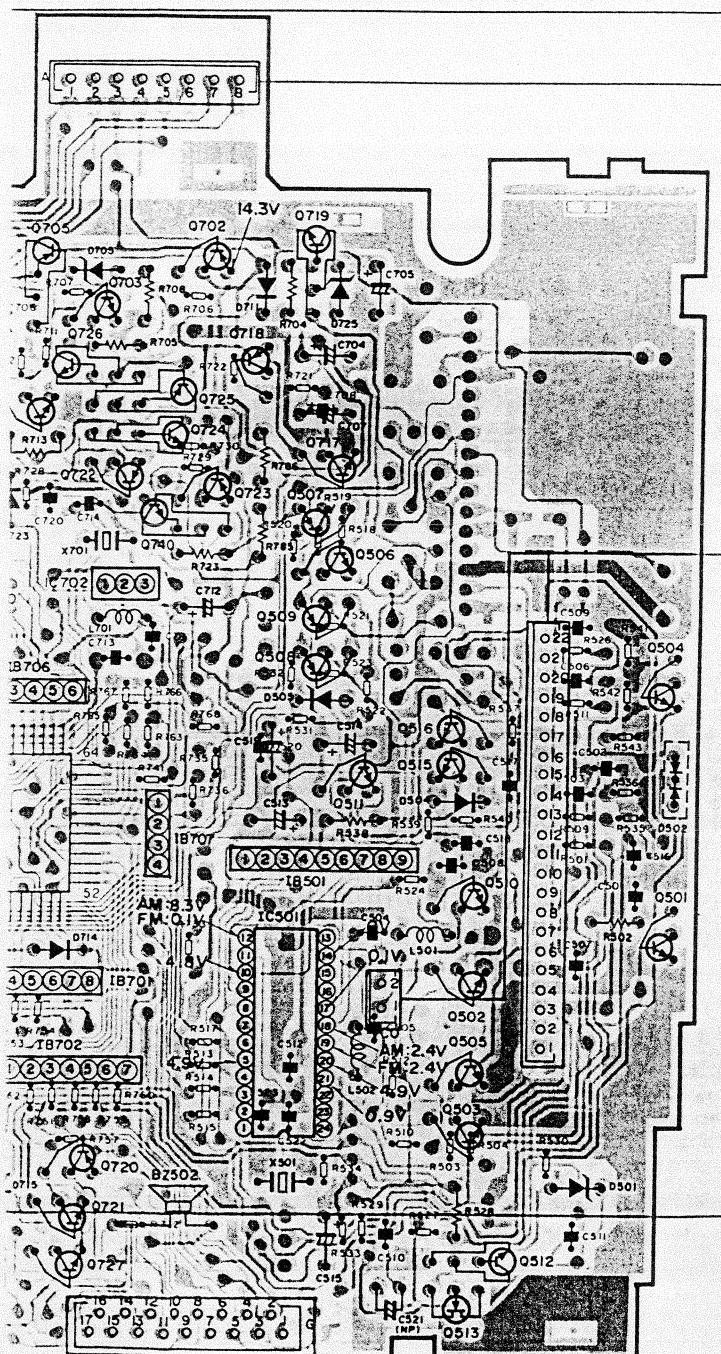
12

AMP P.C.BOARD

IC, Q IC551 Q551 Q552 Q556 Q555 Q553 Q554

IC552

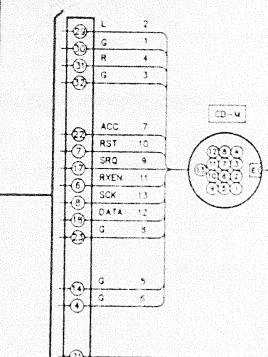
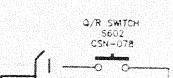
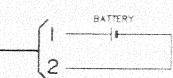
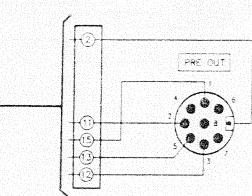
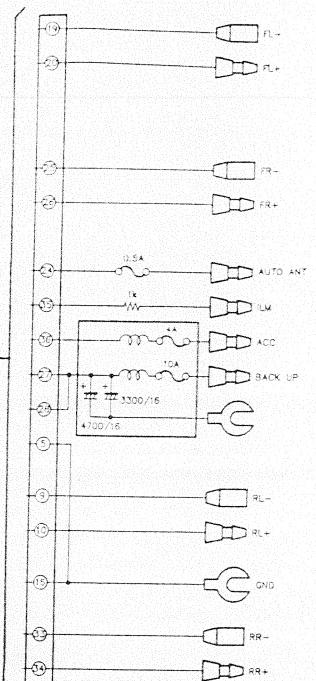
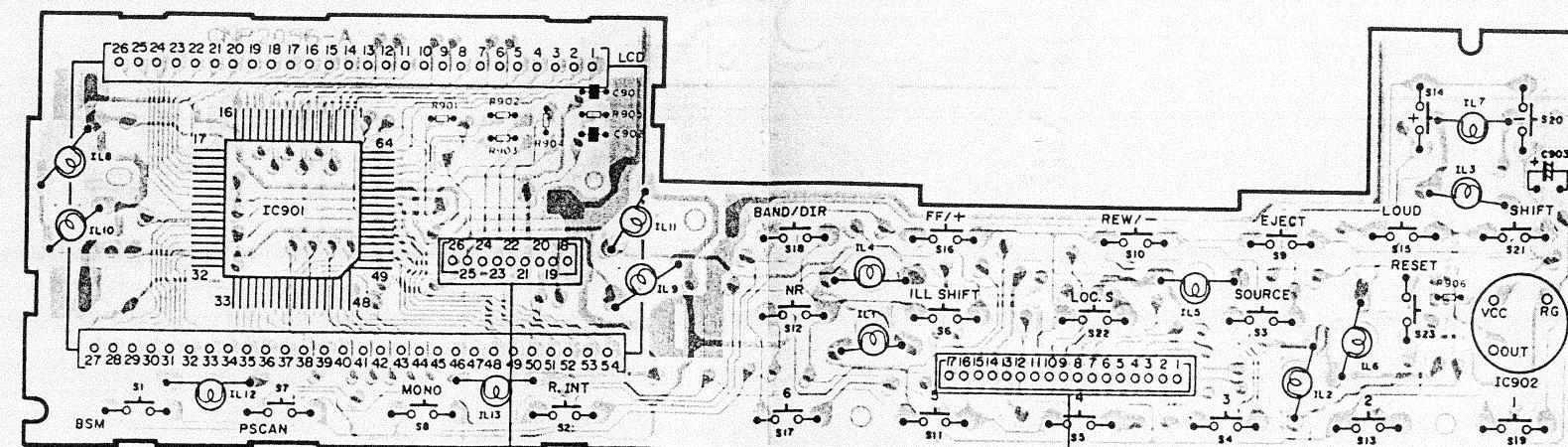
Q1
 15 Q703 Q726 Q702 Q718
 5 Q724 Q722 Q723 Q740 Q506 Q507 Q717 Q719
 IB704 Q750 Q509 Q508 Q511 Q516 Q515 Q504
 702 IB701 IB707 IC501 IB501 Q510 Q502 Q503 Q505 Q501
 Q716 Q715 Q714 Q727 Q721 Q720 Q513 Q512



TO FM/AM TUNER UNIT

28	BACK UP	ACC	76
27	BACK UP	ILM	35
26	FL+	20	16
25	FR+	19	25
24	RR+	34	
23	RR-	33	
22	FL-	19	
21	FR-	25	
20	ILM	35	
19	ACC	76	
18	AUTO ANT	U-032	
17	SRQ	17	
16	M-D	31	
15	ACC	76	
14	W-D	14	
13	MULTI G	30	
12	MULTI L	29	
11	ANT GND	38	

DISPLAY UNIT



A

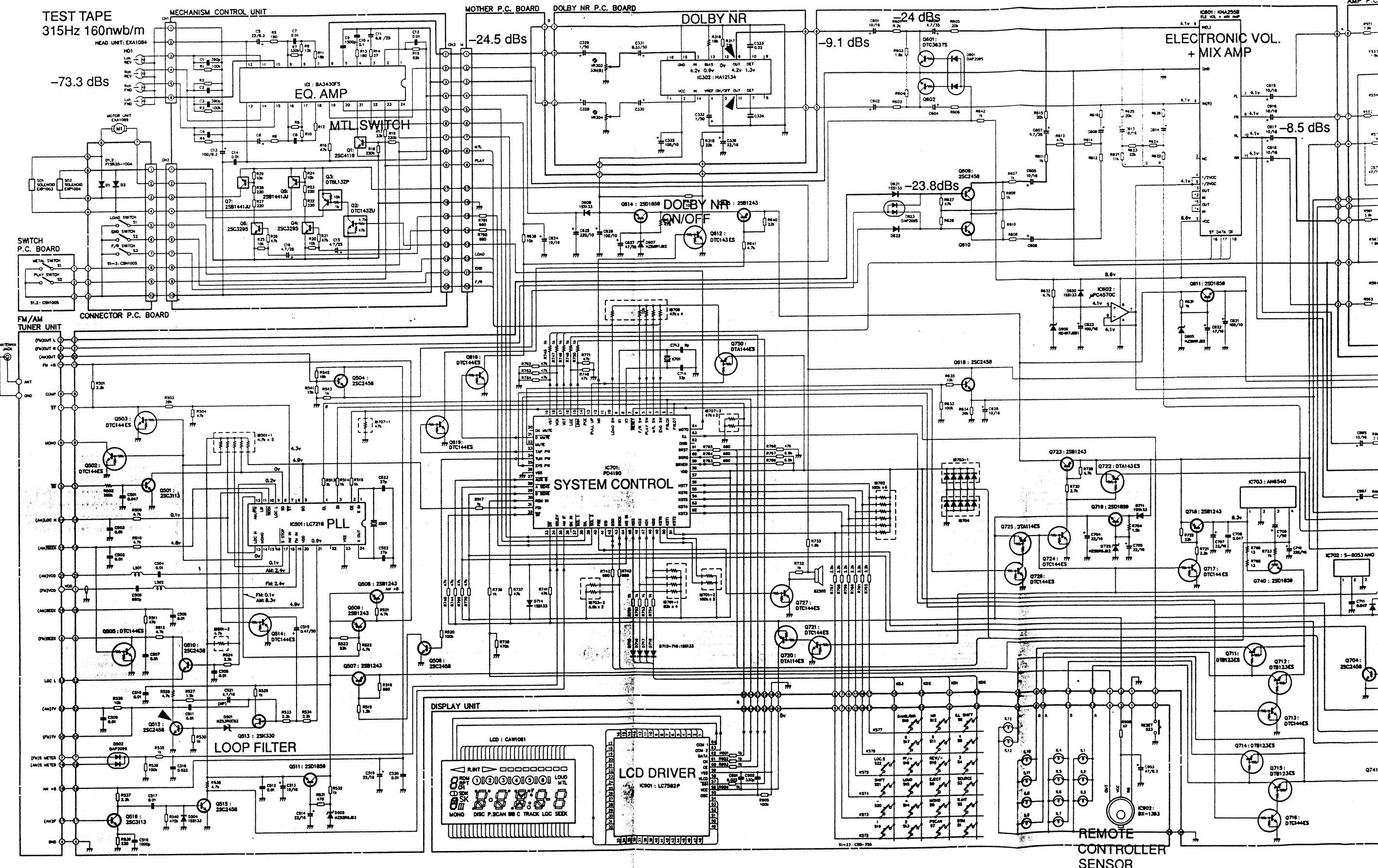
B

C

D

Fig. 12

13. SCHEMATIC CIRCUIT DIAGRAM (KEH-M5000B/EW)



KEH-M5000SDK

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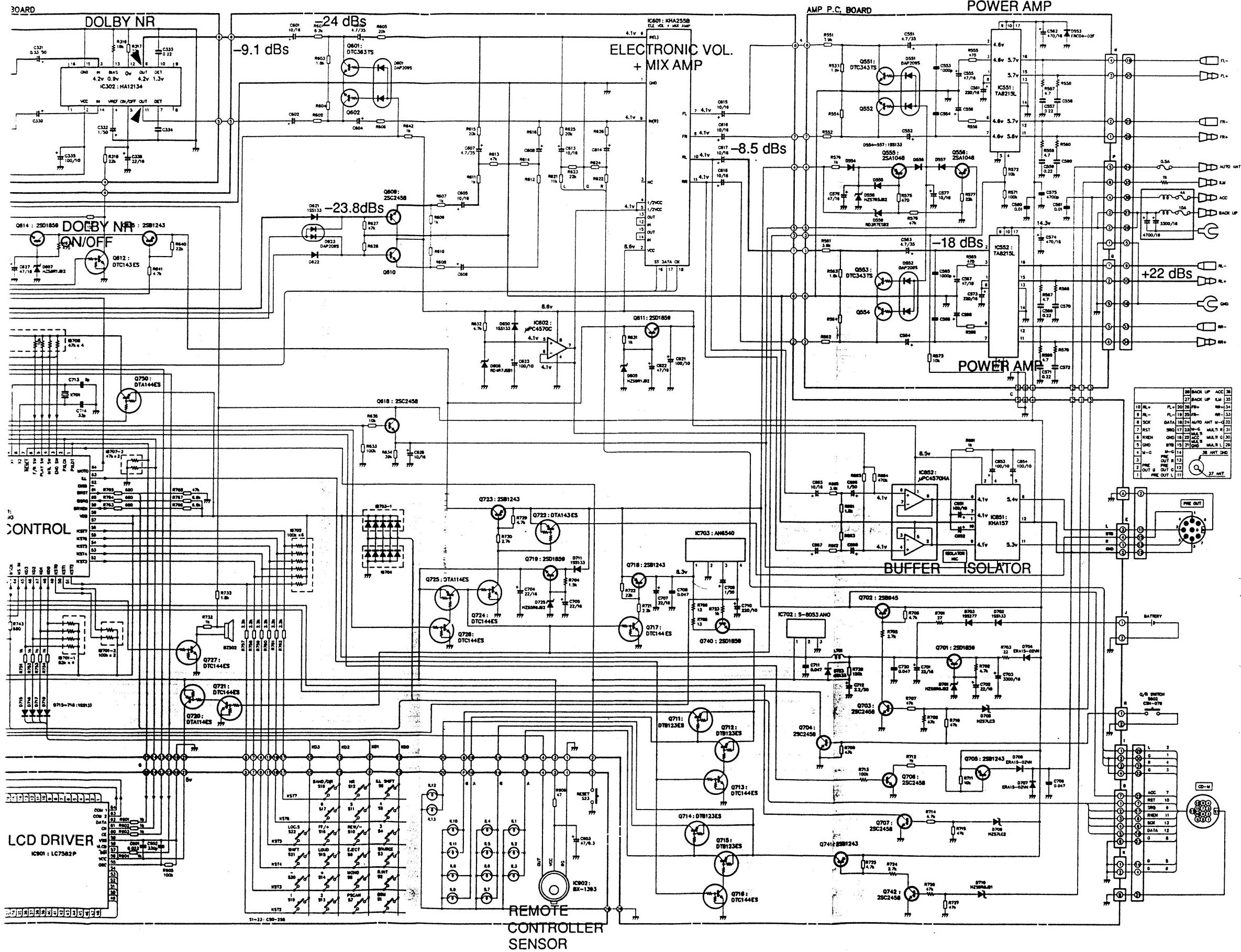
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SWITCHES:

- ④SWITCH P. C. BOARD**

S1: METAL SWITCH.....	<u>ON-OFF</u>
S2: PLAY SWITCH.....	<u>ON-OFF</u>

⑤CONNECTOR P. C. BOARD

S1: LOAD SWITCH.....	<u>ON-OFF</u>
S2: END SWITCH.....	<u>ON-OFF</u>
S3: F/R SWITCH.....	<u>ON-OFF</u>

The underlined indicates the switch position.

Tubes Ans Unit

- Mother P.C. Board
 - Amp P.C. Board
 - Dolby NR P.C. Board

NOTE :

- Indicates a chip resistor.
 - Indicates a chip capacitor.
 - ☒— Indicates a chip transistor.
 - Indicates a chip diode.

Fig. 13

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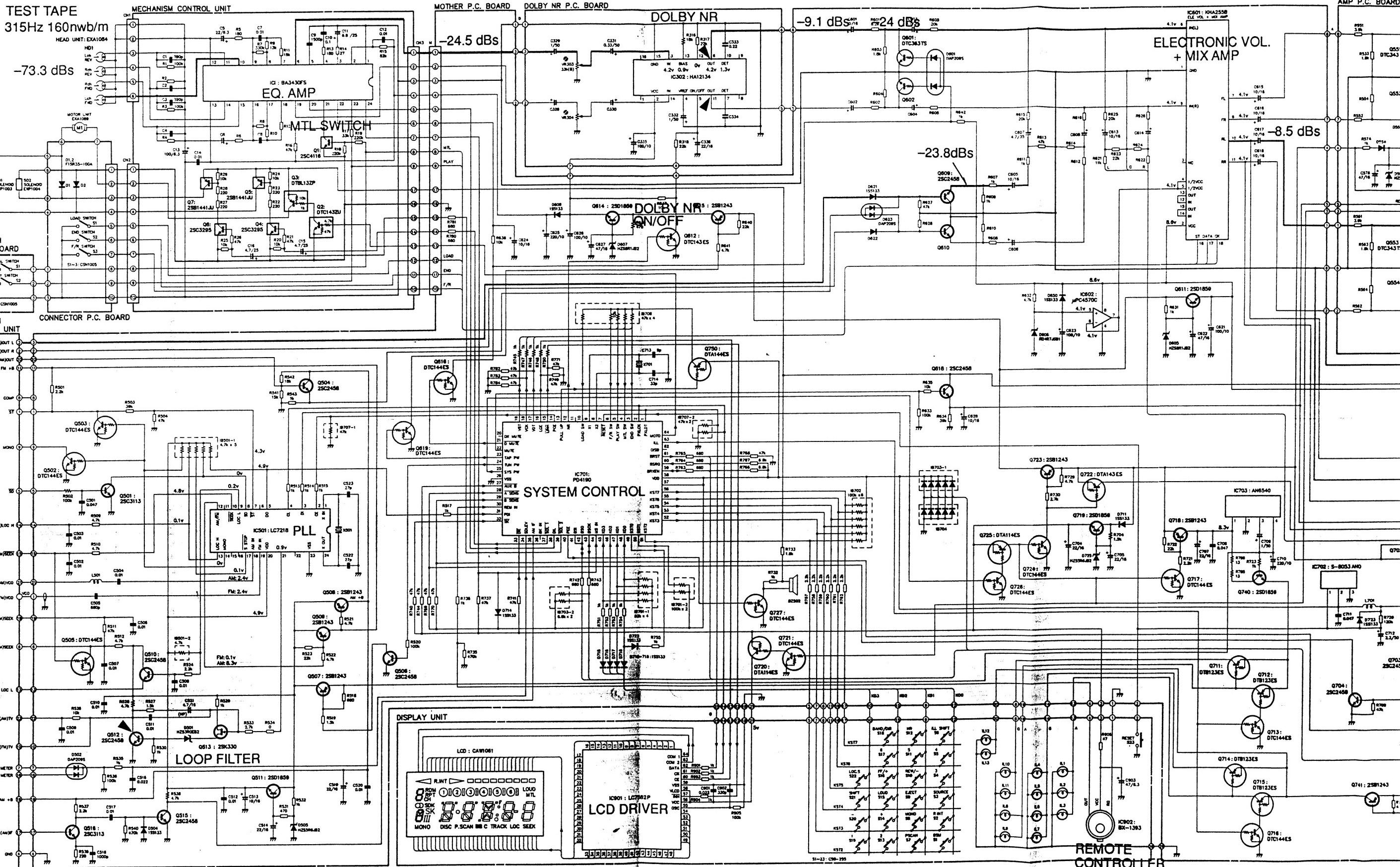
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14. SCHEMATIC CIRCUIT DIAGRAM (KEH-M5000QR/ES)



A

B

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D

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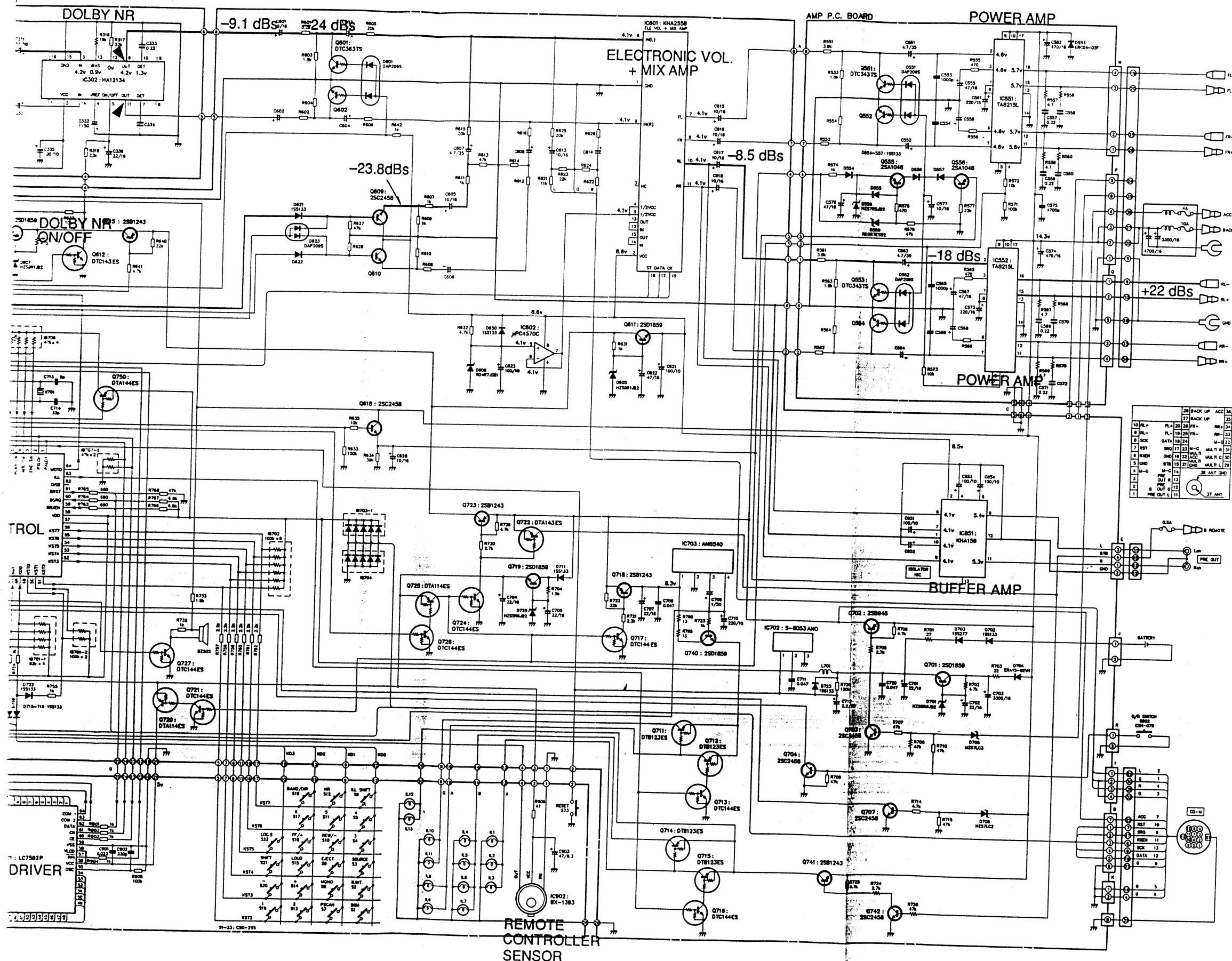
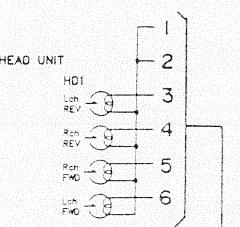


Fig. 14

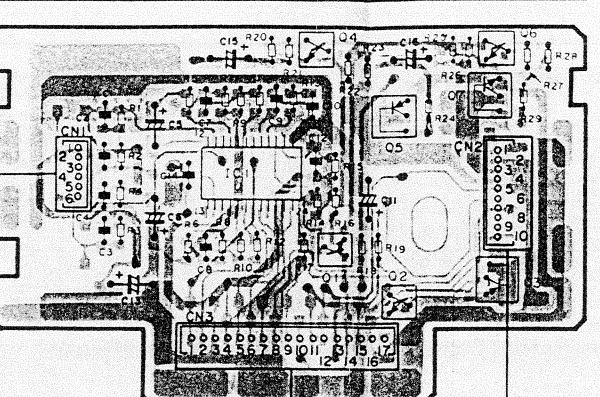
1 2 3 4 5 6
15. CONNECTION DIAGRAM (KEH-M5000QR/ES)

A

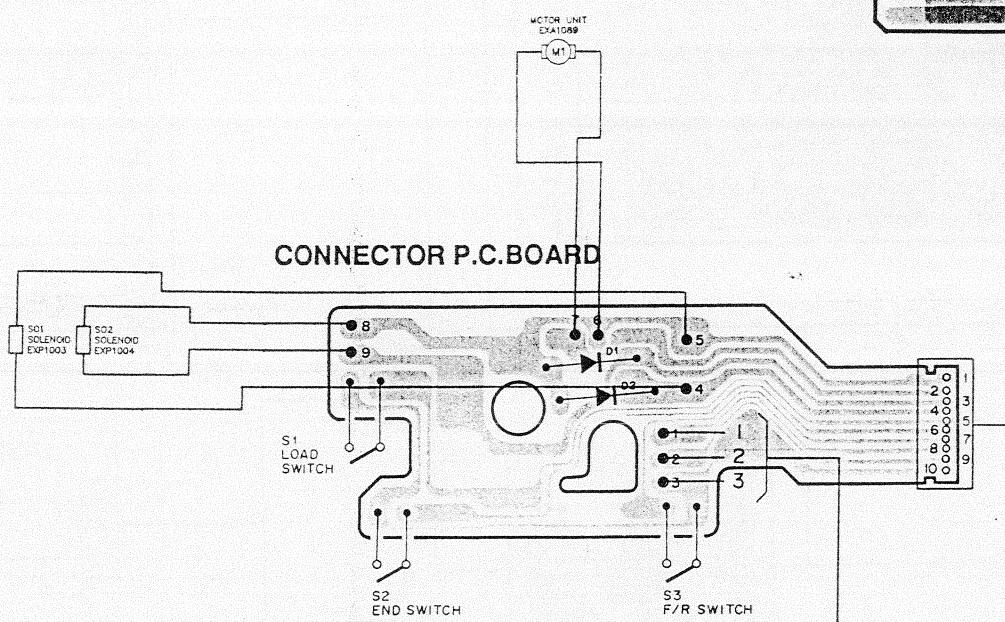


MECHANISM CONTROL UNIT

IC, Q IC1 Q4 Q1 Q2 Q5 Q3 Q7 Q6

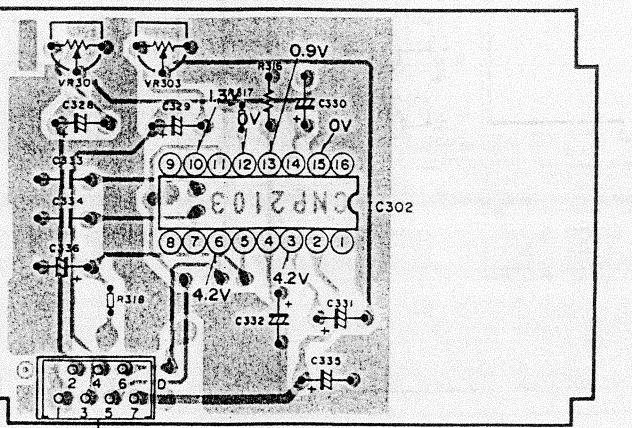


B



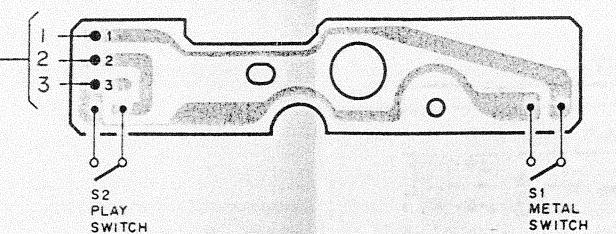
DOLBY NR P. C. BOARD

IC IC302
ADJ VR304 VR303



C

SWITCH P.C. BOARD



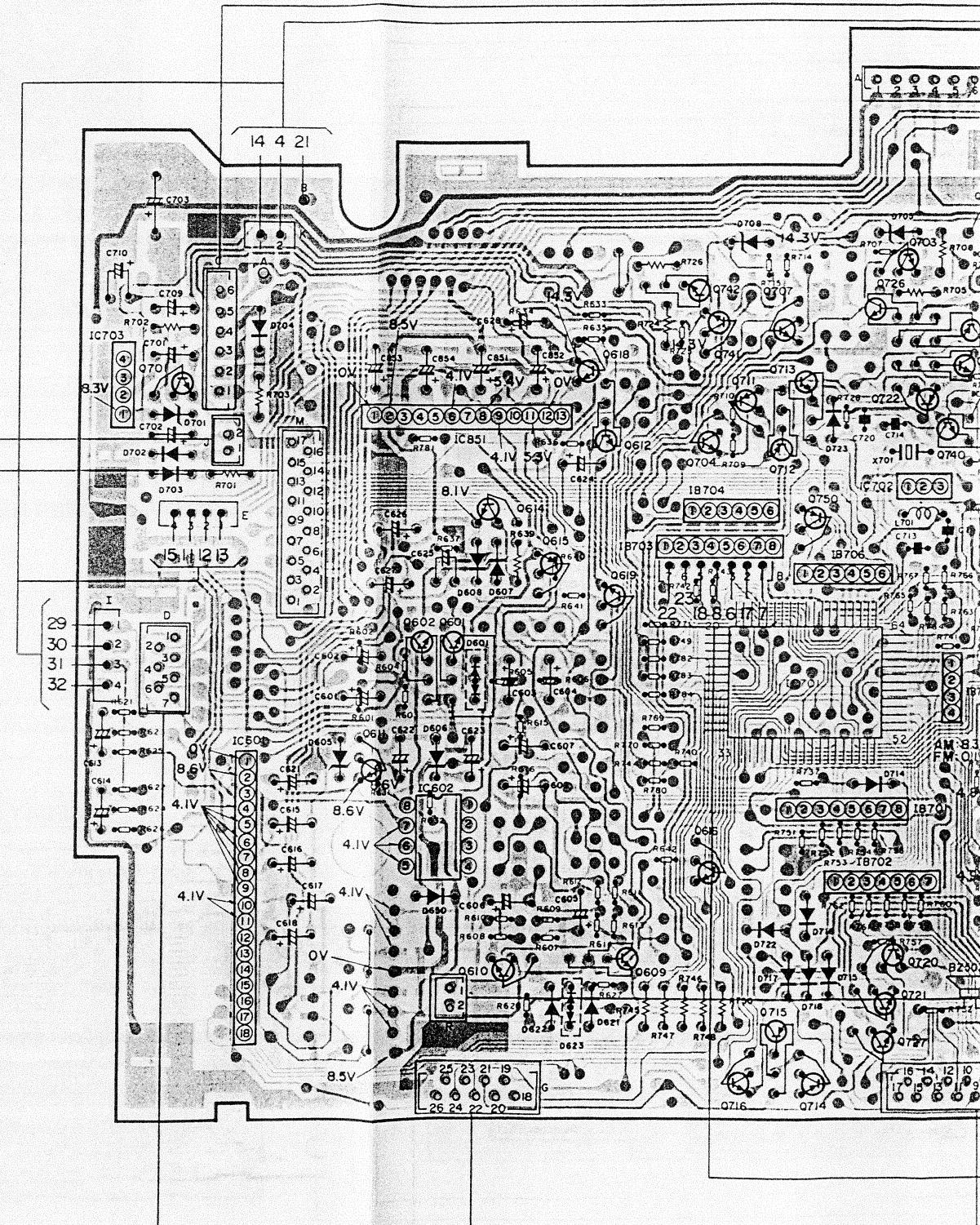
D

MOTHER P.C.BOARD

IC, Q IC703 Q701
IC601

IC851 Q602 Q601 Q614 Q615 Q619 IB703 IB706 IC702 IB701 IB704
IC602 Q611 Q610

IC701
Q703 Q726 Q7
Q742 Q741 Q707
Q725 Q724 Q722 Q7
Q618 Q612 Q704 Q711 Q713 Q712 IB704 Q750 Q5
IB703 IB706 IC702 IB701 IB704
Q609 Q616 Q716 Q715 Q714 Q



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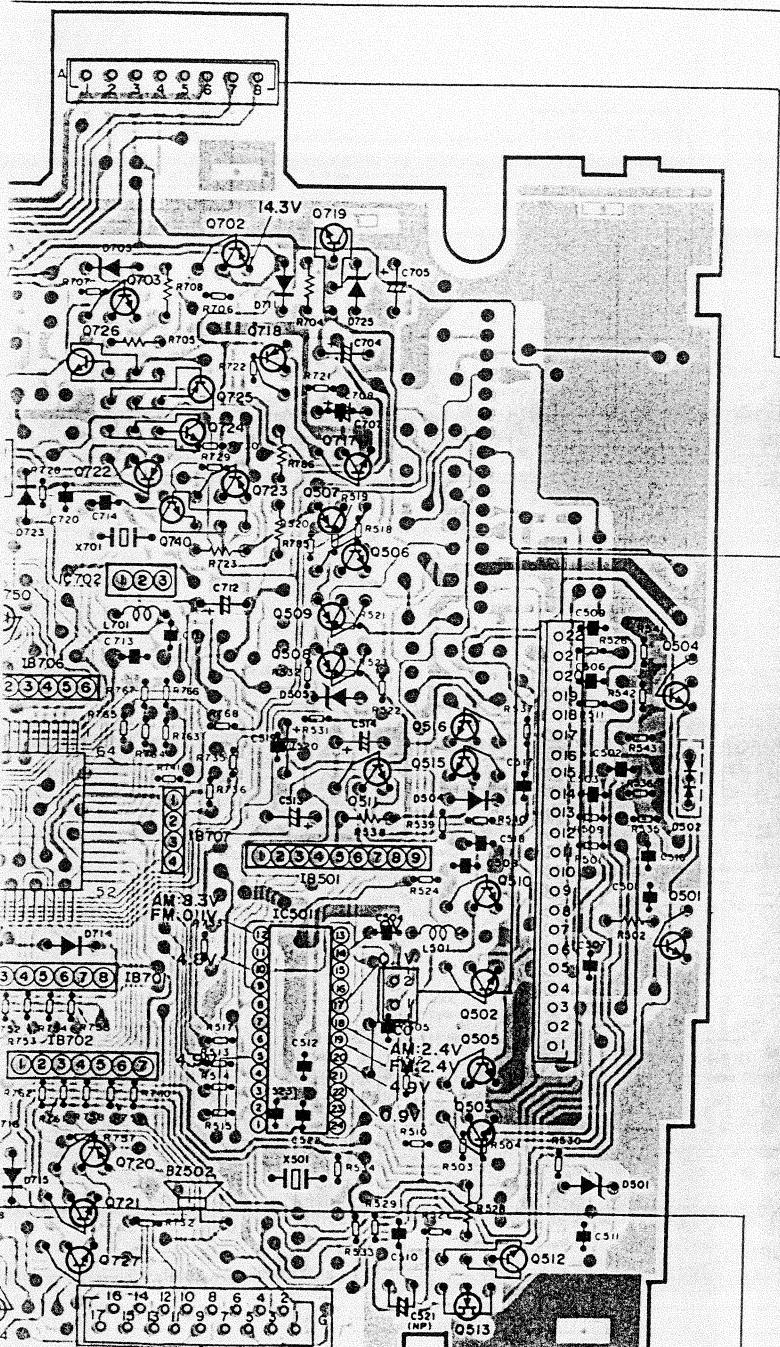
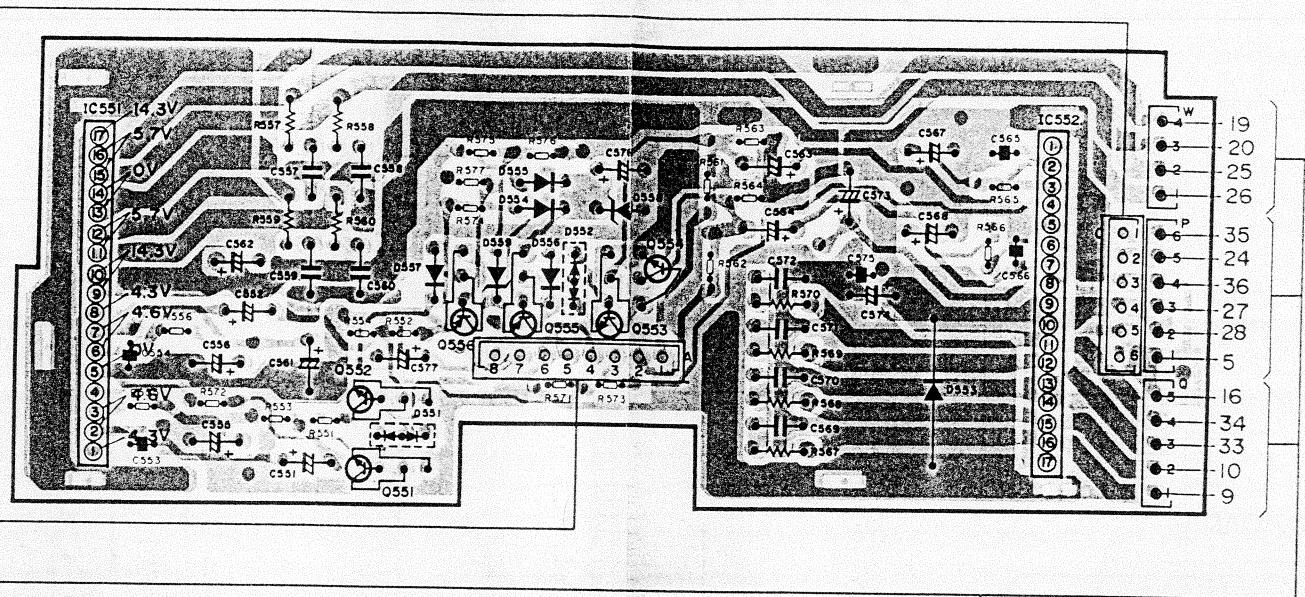
12

AMP P.C.BOARD

701
 Q703 Q726 Q702 Q718
 25 Q724 Q722 Q723 Q740 Q506 Q507 Q717 Q719
 2 IB704 Q750 Q509 Q508 Q511 Q516 Q515 Q504
 IC702 IB701 IB707 IC501 IB501 Q510 Q502 Q503 Q505 Q501
 Q716 Q715 Q714 Q727 Q721 Q720 Q513 Q512

IC, Q IC551 Q551 Q552 Q556 Q555 Q553 Q554

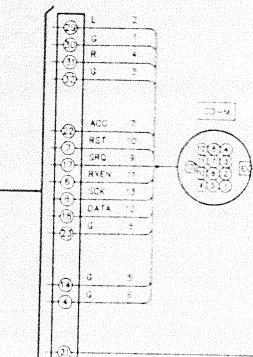
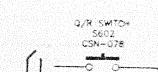
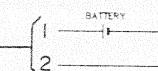
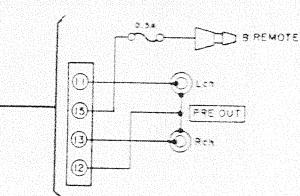
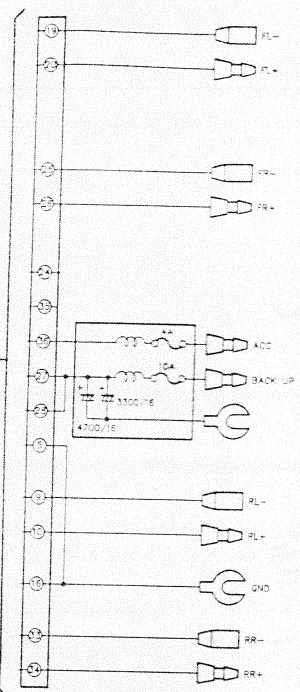
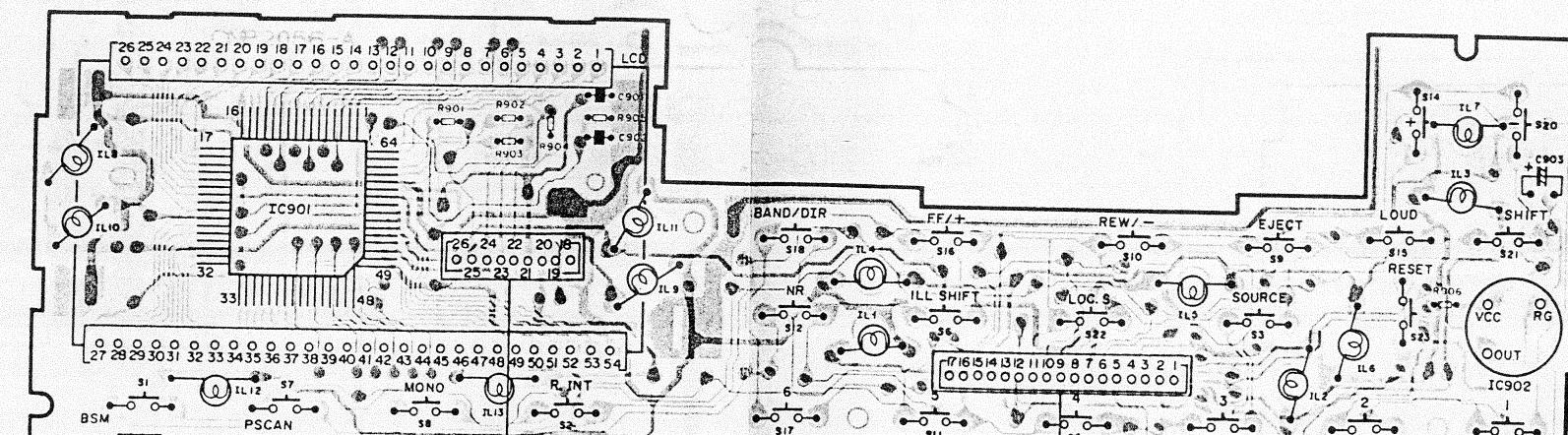
IC552



→ TO FM/AM TUNER UNIT

	26 BACK UP ACC 36
10	RL+ FL+ 20 26 FR+ RR+ 34
2	RL- FL- 19 25 FR- RR- 33
8	SCK DATA 18 24 M- 32
7	RST SRD 17 23 M-G MULT R 31
6	RVEN GND 16 22 MULD MULT G 30
5	BTB 15 21 GND MULT L 29
4	M-G L-G 14 PRE OUT R 13
3	FIRE 12 PRE OUT D 12
2	PRE OUT L 11 37 ANT
1	PRE OUT L 11 37 ANT

DISPLAY UNIT



A

B

C

D

16. FM/AM TUNER UNIT

• KEH-M5000SDK/WG, KEH-M5000B/EW

• KEH-M5000QR/ES

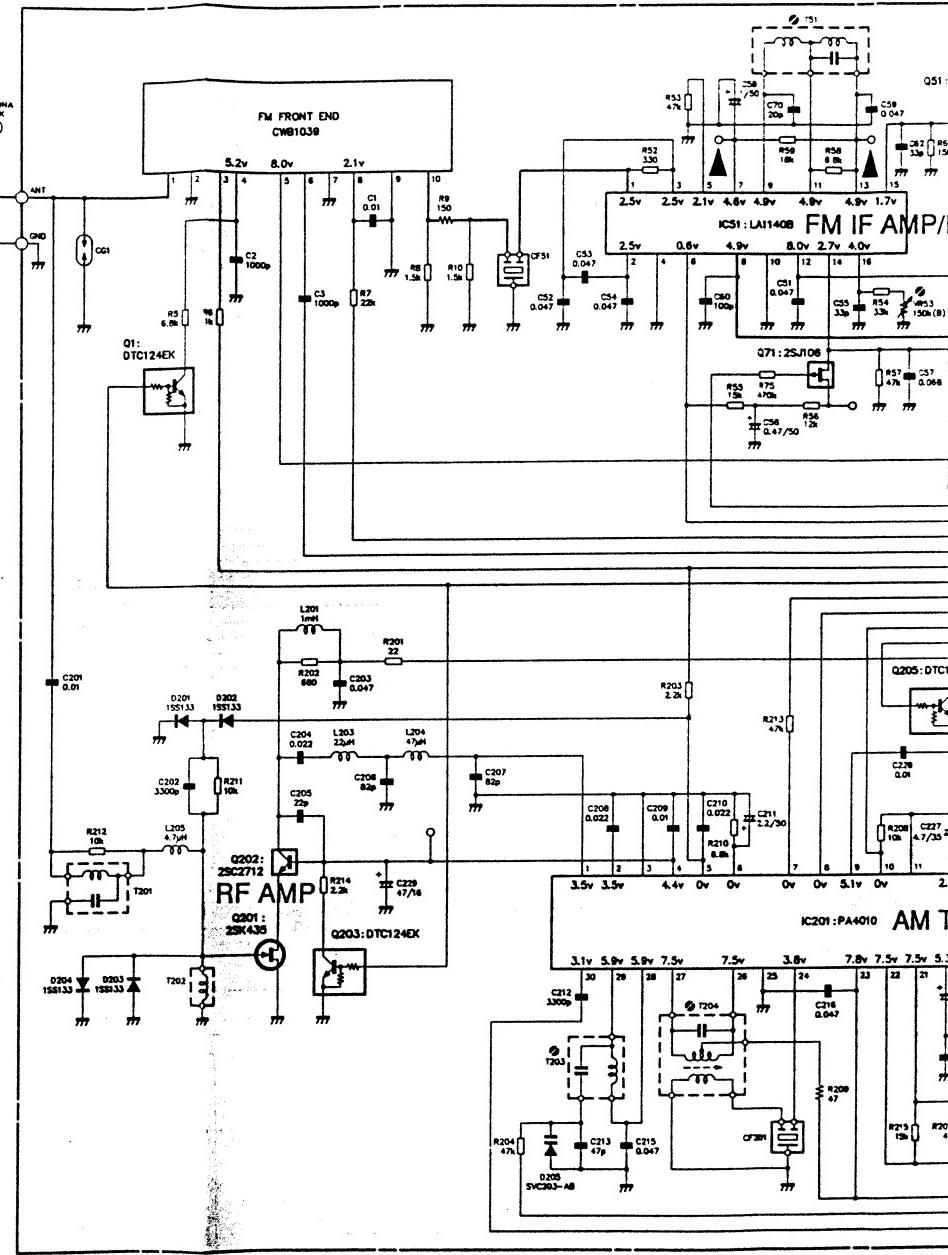
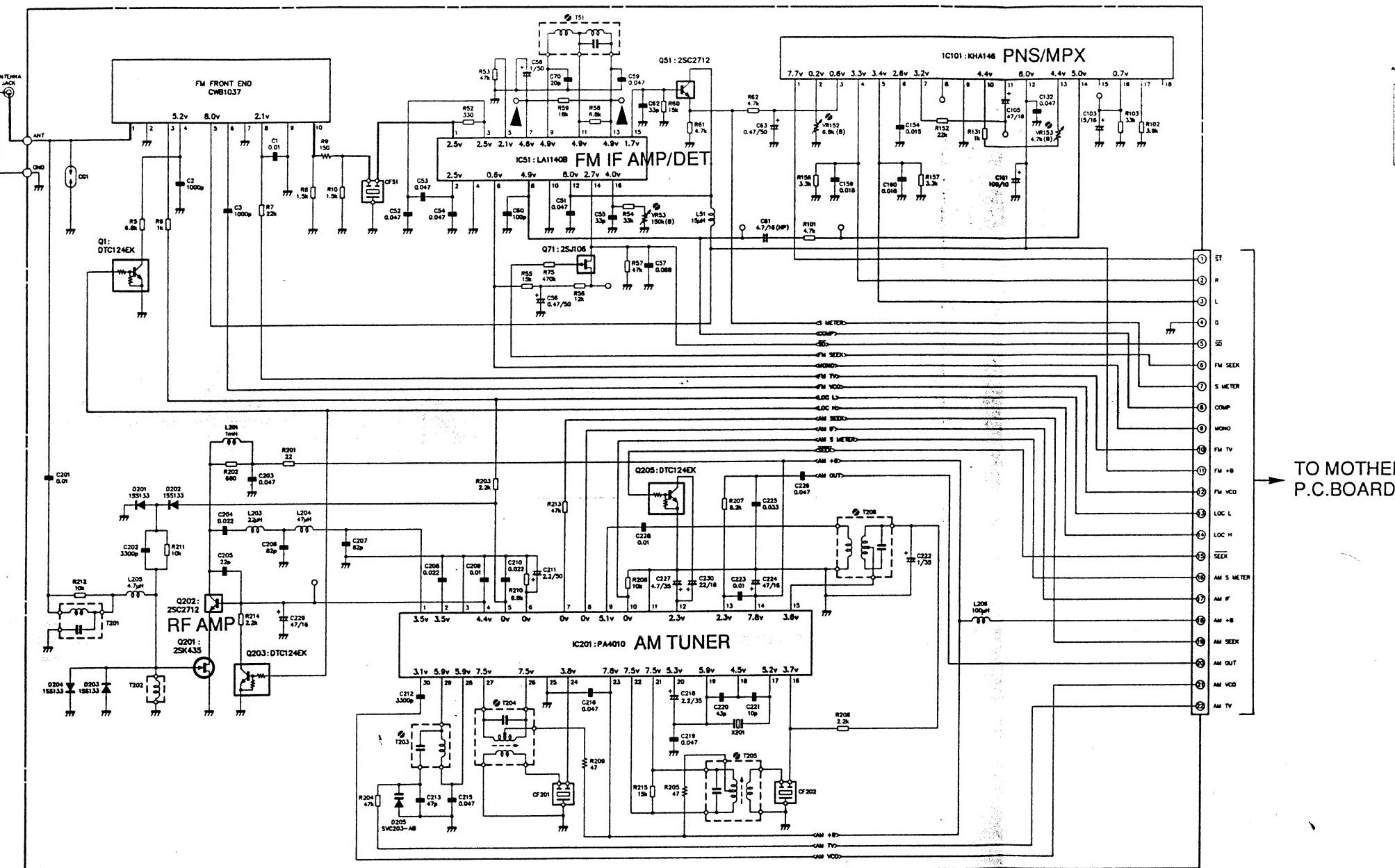


Fig. 16

• KEH-M5000SDK/WG, KEH-M5000B/EW, KEH-M5000QR/ES

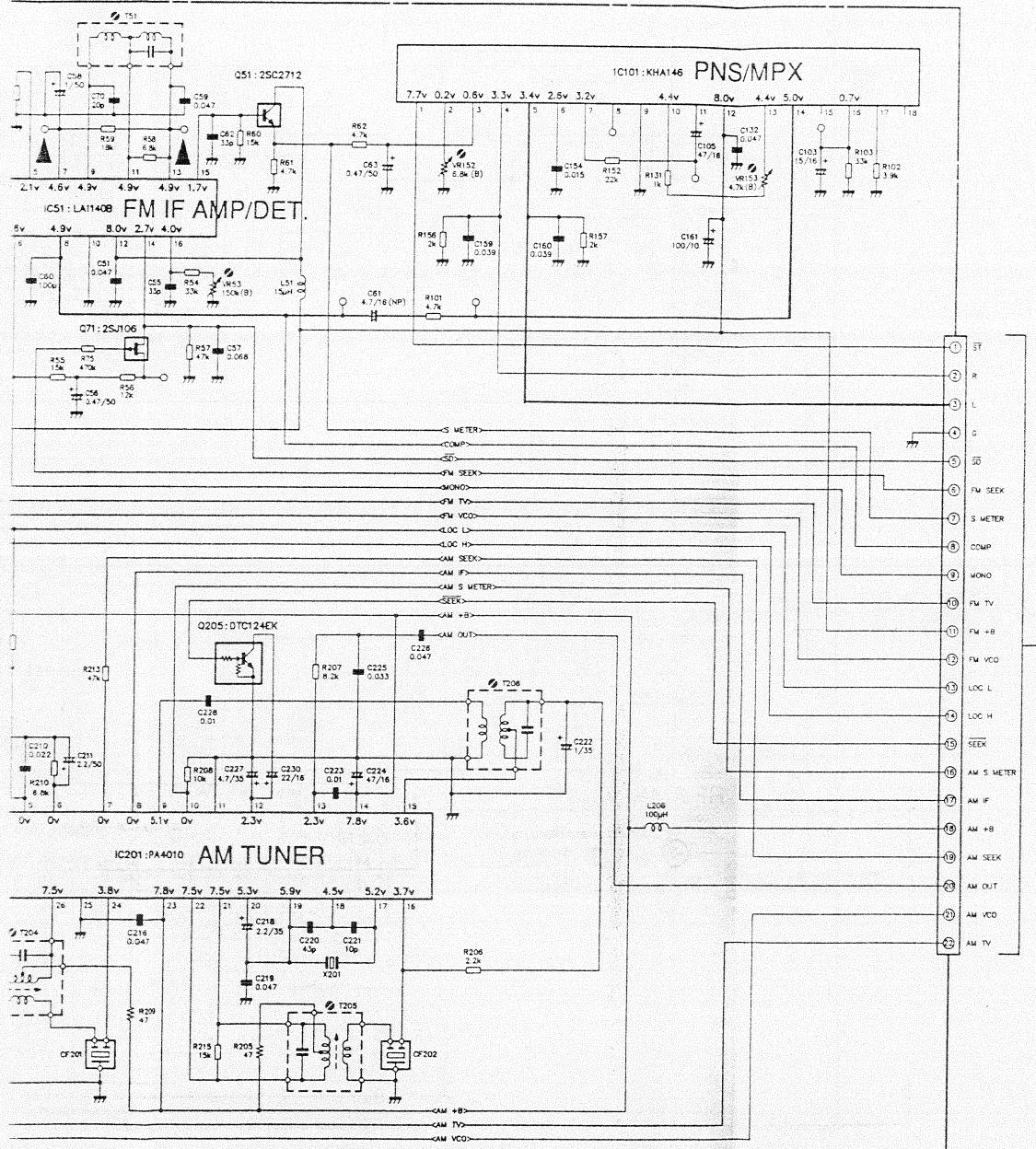


Fig. 17

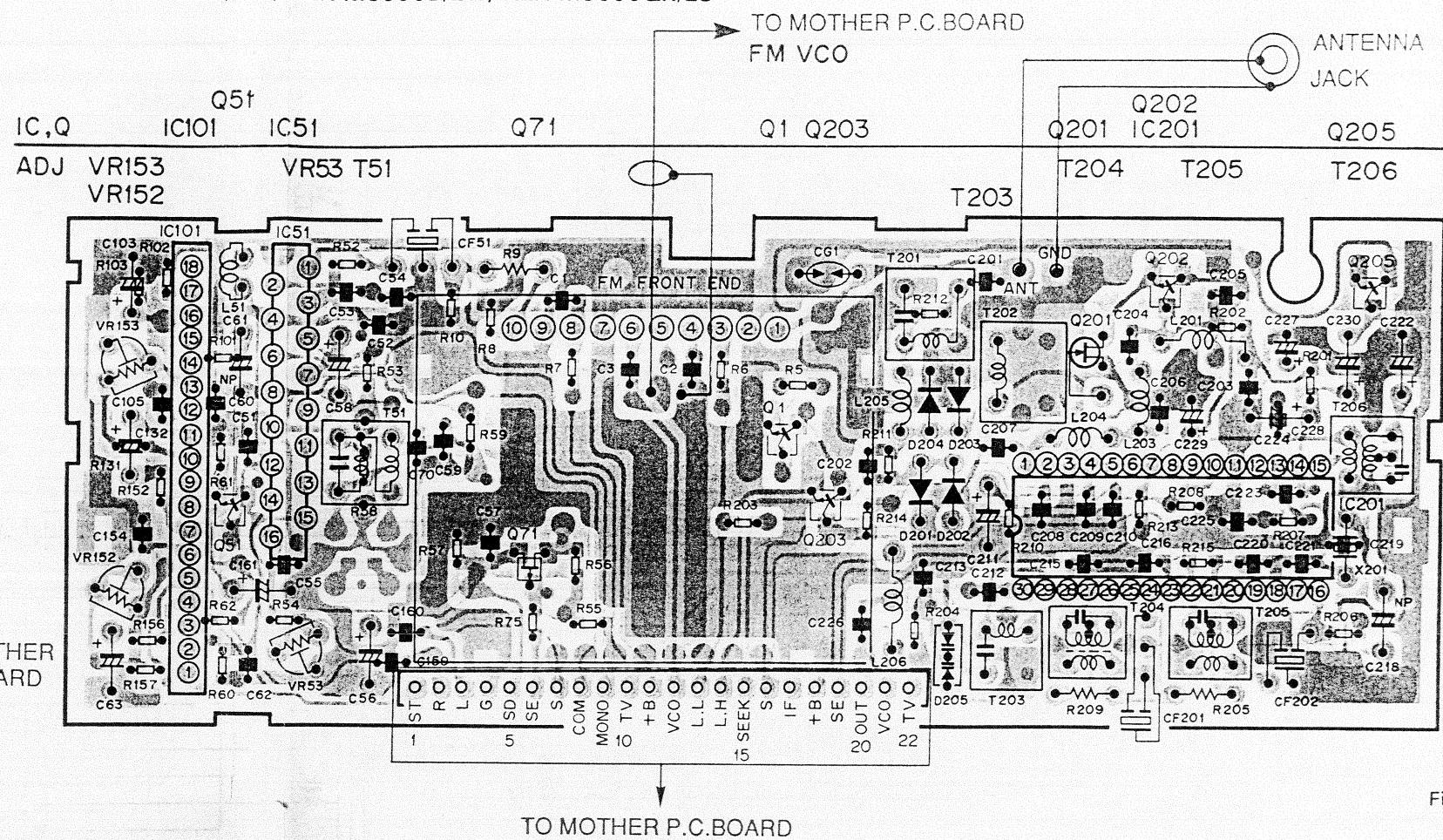
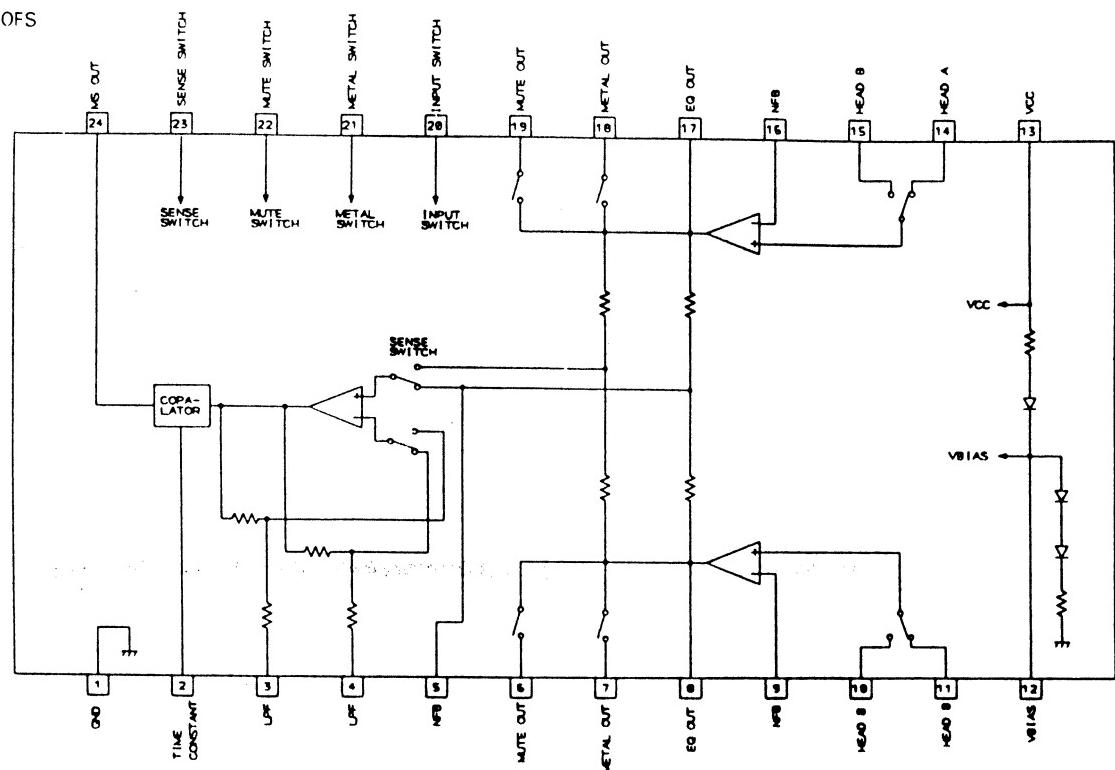
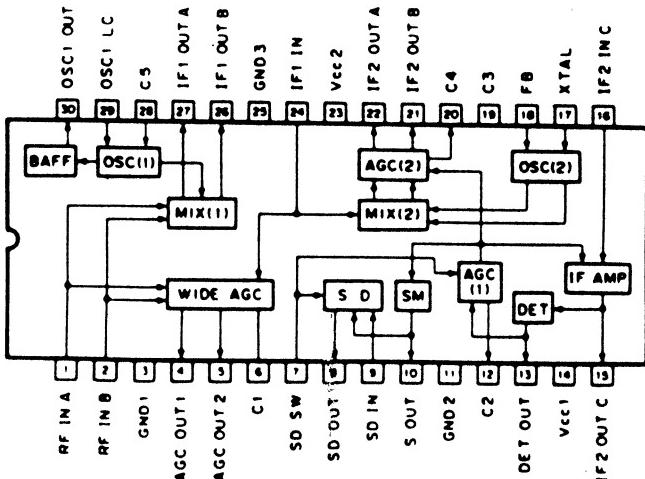


Fig. 18

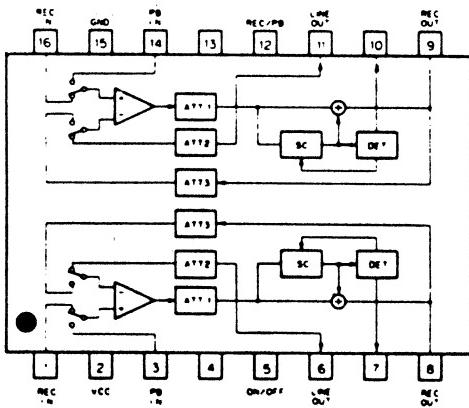
IC1 : BA3430FS



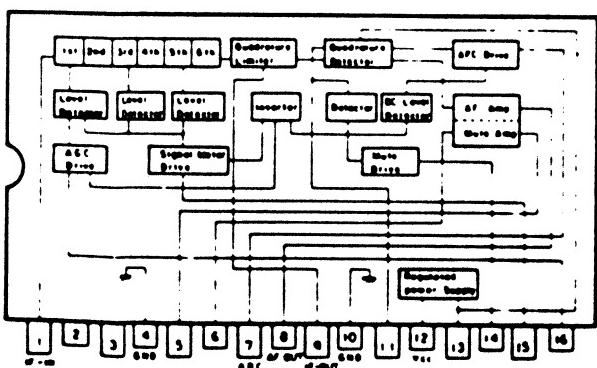
IC201 : PA4010



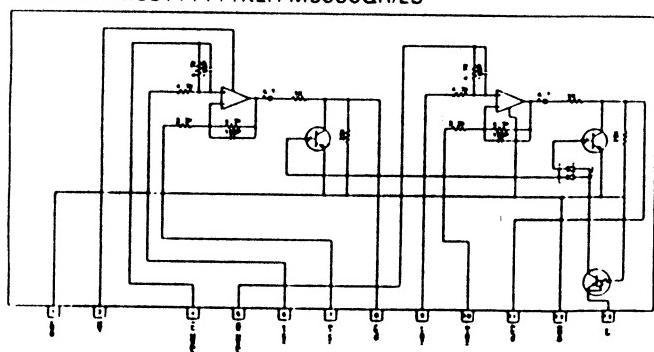
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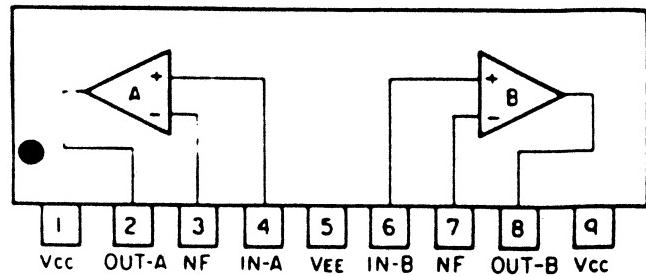
IC51 : LA1140B



IC851 : KHA158 KEH-M5000QR/ES



IC852 : μPC4570HA

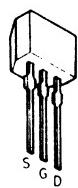


• ICs and Transistors

2SB1243
2SD1859



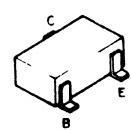
2SK330



2SJ106



2SC2712
2SC3295
2SC4116



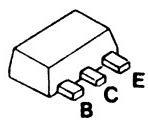
2SB945



2SA1048
2SC2458
2SC3113



2SB1441JU



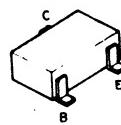
2SK435



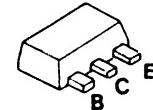
DTA144ES



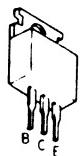
DTC124EK
DTC143ZU



DTBL13ZP



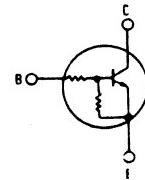
DTB123ES



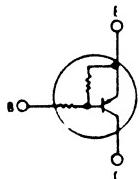
DTA114ES
DTA143ES
DTC143ES
DTC144ES
DTC343TS
DTC363TS



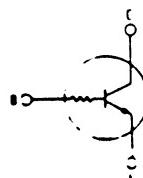
DTC143ES
DTC144ES



DTA114ES
DTA143ES
DTA144ES
DTB123ES

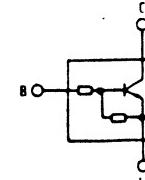


DTC343TS
DTC363TS

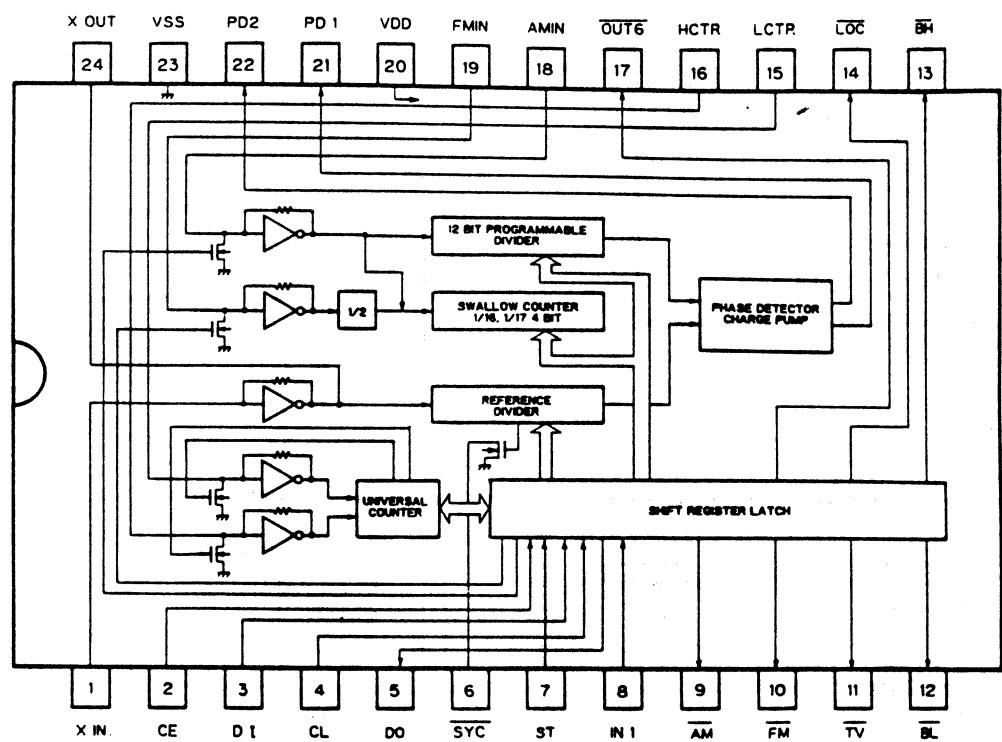


DTBL13ZP

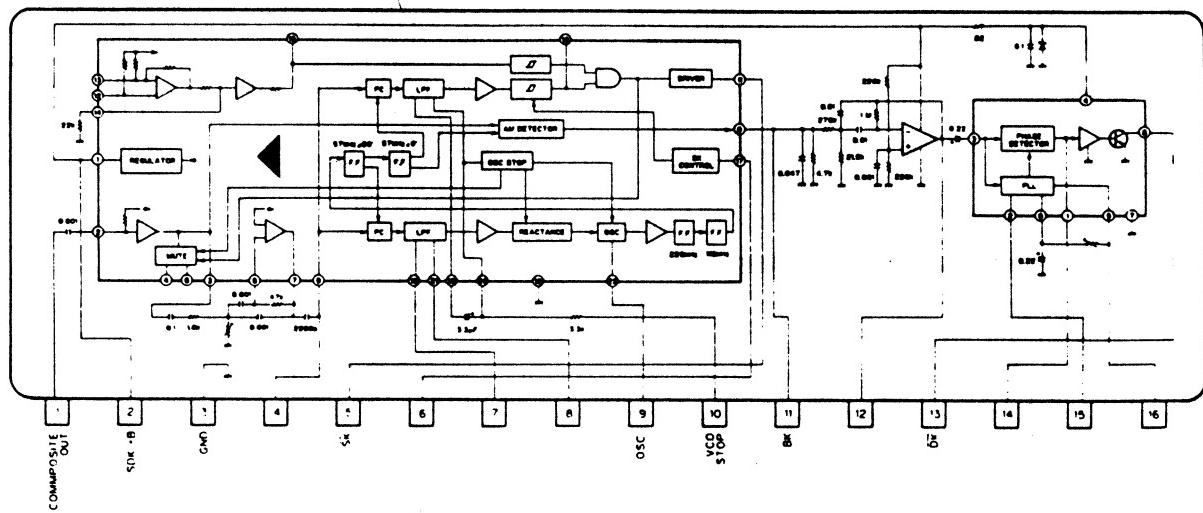
DTC124EK
DTC143ZU



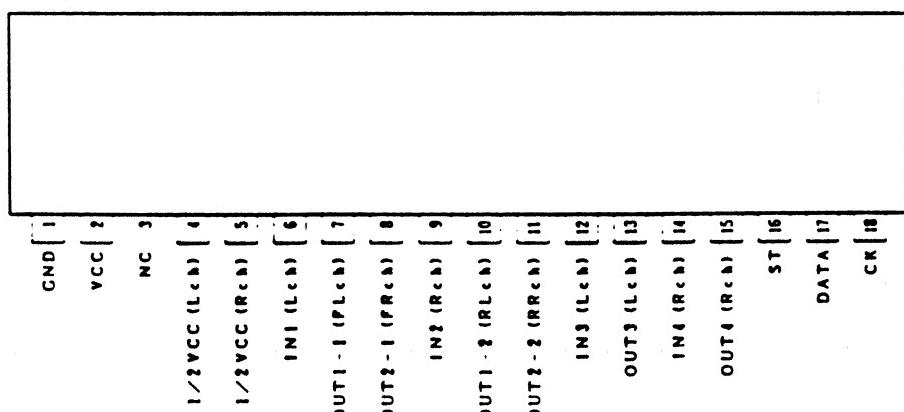
IC501:LC7218



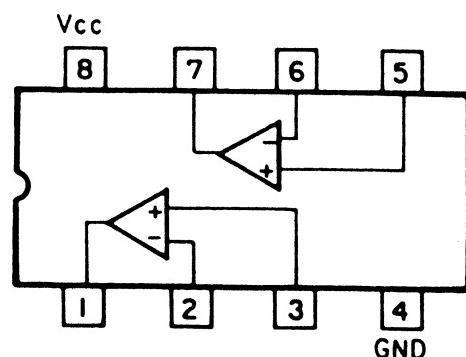
IC802:KHA142



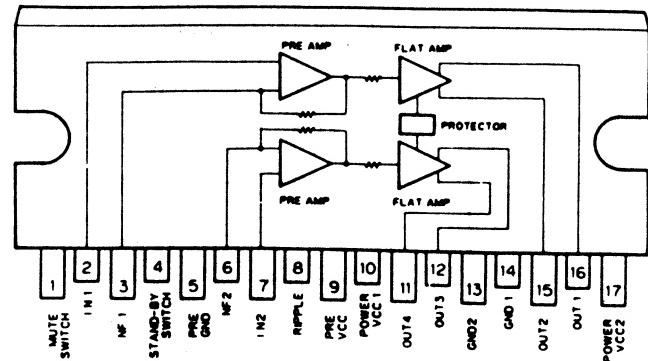
IC601:KHA255B



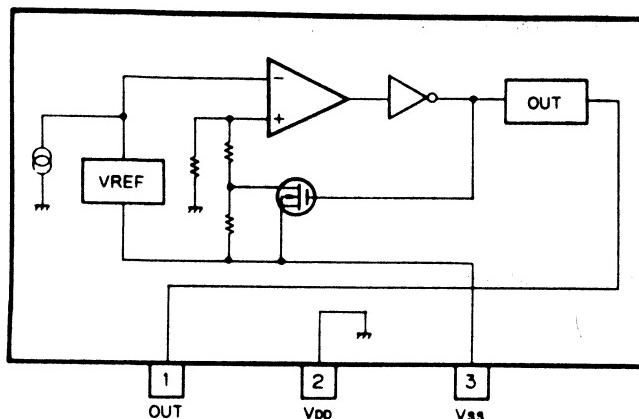
IC602: μPC4570C



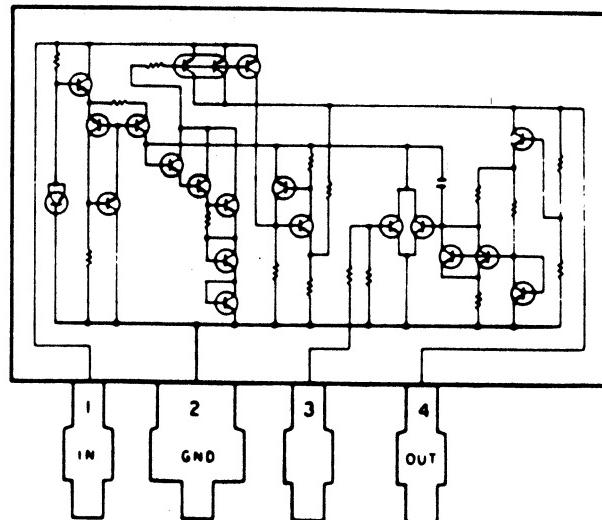
IC551, 552: TA8215L



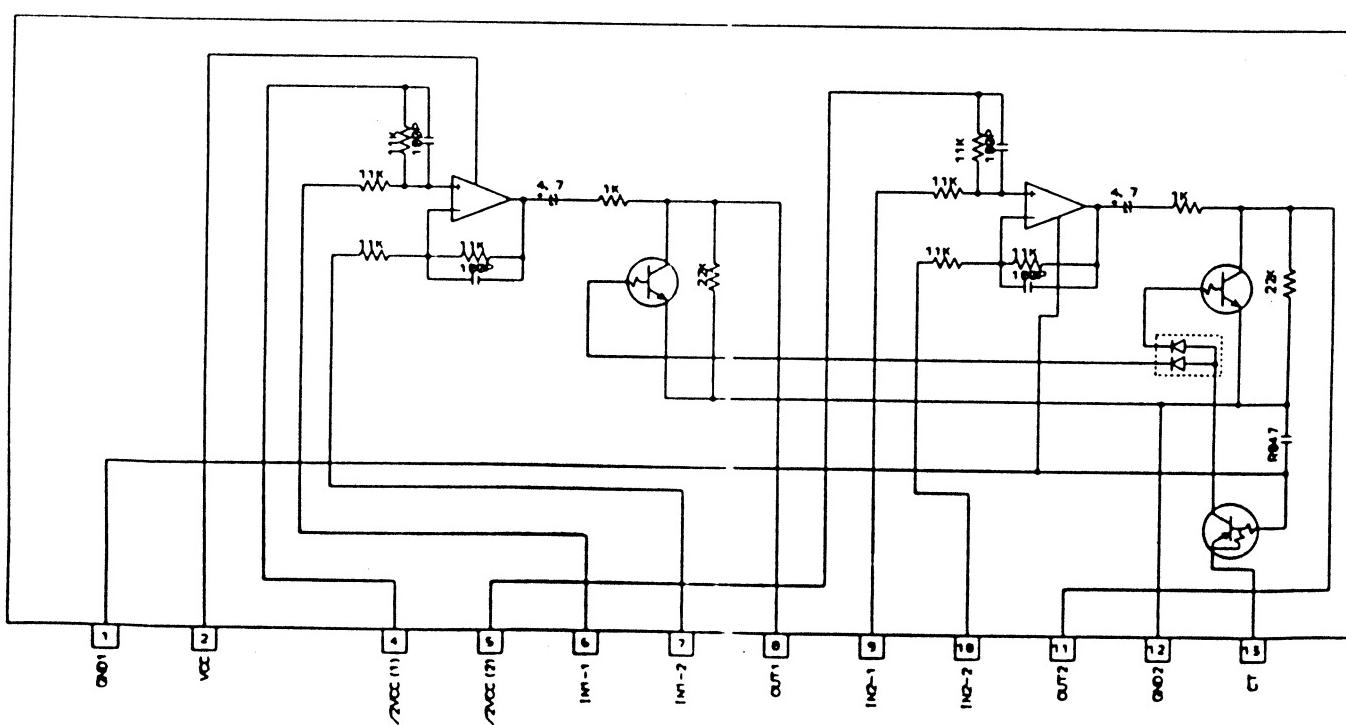
IC702: S-8053ANO



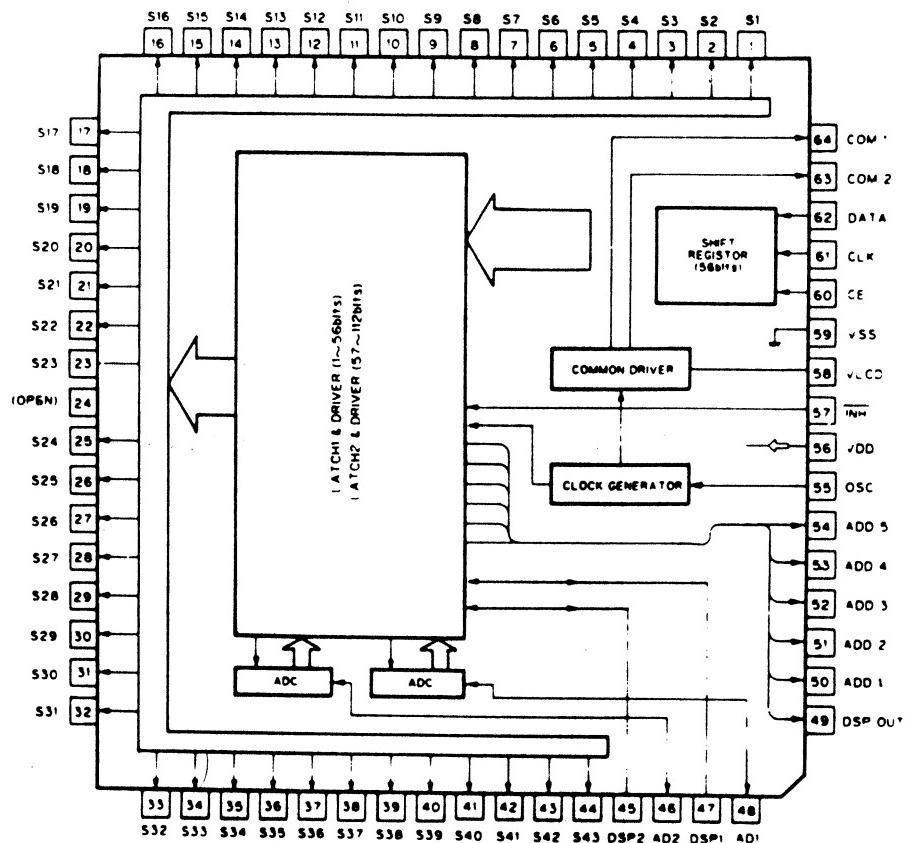
IC703: AN6540



IC851: KHA157 KEH-M5000SDK/WG, KEH-M5000B/EW



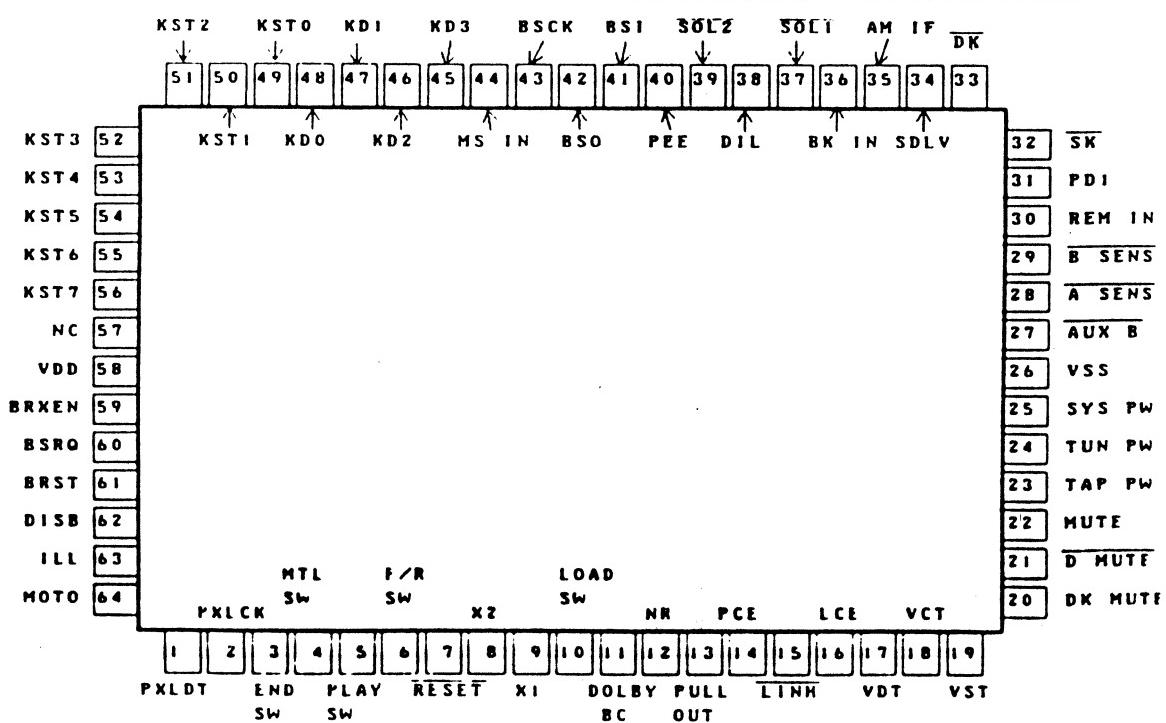
IC901:LC7582P



IC701: *PD4190

IC's marked by * are MOS type.

Be careful in handling them because they are very liable to be damaged by electrostatic induction.



• Pin Functions (PD4190)

Pin No.	Pin Name	I/O	Output Format	Function and Operation	STBY	RST
1	PXLDT	Output	C	LCD driver IC and PLL IC data line		
2	PXLCK	Output	C	LCD driver IC and PLL IC clock line	L	Hi-Z
3	END SW	Input		Deck END sensor input	L	Hi-Z
4	MTL SW	Input		Deck METAL(70 μS) sensor input		
5	PLAY SW	Input		Deck head position(PLAY) sensor input		
6	F/R SW	Input		Deck FWD/REV sensor input		
7	<u>RESET</u>	Input		Reset input		
8	X2			Crystal oscillating element connection pin		
9	X1			Crystal oscillating element connection pin		
10	LOAD SW	Input		Deck LOAD/EJECT sensor input		
11	DOLBYBC	Output	C	Not used		
12	NR	Output	C	Dolby NR ON/OFF output	L	Hi-Z
13	PULL UP	Output	C	Cut pull up for deck switches when BACK UP is OFF	L	Hi-Z
14	PCE	Output	C	Chip enable output for PLL IC (IC501:LC7218)	L	Hi-Z
15	LINH	Output	C	LINH control output for LCD driver IC(IC901:LC7582P)	L	Hi-Z
16	LCE	Output	C	Chip enable or strobe output for LCD driver IC	L	Hi-Z
17	VDT	Output	C	Data output for electronic volume IC(IC601:KHA255B)	L	Hi-Z
18	VCK	Output	C	Clock output for electronic volume IC(IC601:KHA255B)	L	Hi-Z
19	VST	Output	C	Strobe output for electronic volume IC(IC601:KHA255B)	L	Hi-Z
20	DK MUTE	Output	C	Not used	H	Hi-Z
21	D MUTE	Output	C	Deck mute output	H	Hi-Z
22	MUTE	Output	C	System mute output	H	Hi-Z
23	TAP PW	Output	C	Deck power supply control	L	Hi-Z
24	TUN PW	Output	C	Tuner power supply control	L	Hi-Z
25	SYS PW	Output	C	System(power amp)power supply control	L	Hi-Z
26	VSS			GND		
27	AUX B	Input		AUX B sensor input		
28	A SENS	Input		ACC power supply sensor input		
29	B SENS	Input		BACK UP power supply sensor input		
30	REM IN	Input		Remote control pulse input		
31	PDI	Input		Data input for PLL IC (IC501:LC7218)	L	Hi-Z
32	SK	Input		SK signal input		
33	DK	Input		DK signal input		
34	SDLEV	Input		Input level sensor input		
35	AM IF	Input		AM IF count input		
36	BK IN			Not used		
37	SOL 1	Output	C	Output for deck solenoid 1 (head position)	L	Hi-Z
38	DIL	Output	C	Deck FWD/REV head selector output	Keep	Hi-Z
39	SOL 2	Output	C	Output for deck solenoid 2 (DIR selector and EJECT)	L	Hi-Z
40	PEE	Output	C	Beep tone output	L	Hi-Z

17. CHASSIS EXPLODED VIEW

- Parts List

NOTE:

- For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★: GENERALLY MOVES FASTER THAN ★.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts whose parts numbers are omitted are subject to being not supplied.
- Parts marked by “◎” are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Remote Control Assy (ES)	CXA2958		34	Insulator	
	2	Cover (ES)	CZN3224		35	Cover	
	3	Screw	BMZ26P050FMC		36	Cushion	
◎	4	Cassette Mechanism Assy	EXK1410		37	Lens	CNV2288
	5	Arm	CNV2078		38	Cushion	
◎	6	Mechanism Control Unit	CWM1967	★	39	Button	CAC1988
	7	Connector		★	40	Button	CAC1987
	8	Connector		★	41	Button	CAC1989
	9	Connector		★	42	Button	CAC1990
	10	Screw	CBA1022		43	Spacer	
	11	Case		★	44	Button	CAC1831
	12	.....		★	45	Button	CAC1830
	13	Insulator		★	46	Button	CAC1832
◎	14	FM/AM Tuner Unit (WG, EW)	CWE1146	★	47	Button	CAC1998
◎		FM/AM Tuner Unit (ES)	CWE1147	★	48	Button	CAC1833
	15	Plug		★	49	Button	CAC1834
	16	FM Front End (WG, EW)	CWB1037	★	50	Button	CAC1804
		FM Front End (ES)	CWB1039		51	Stopper	
	17	Insulator			52	Spacer	
	18	Antenna Jack	CKX1010		53	Shaft	
	19	Chassis		★	54	Button	CAC1991
	20	Insulator		★	55	Button	CAC1992
	21	Screw	BPZ20P060FMC	★	56	Button	CAC1993
◎	22	Display Unit	CWS1145	★	57	Button	CAC1994
	23	Spacer	CNM1642	★	58	Button	CAC1995
	24	Bush	CNV-724	★	59	Button	CAC1996
★★	25	Lamp	CEL-147	★	60	Button	CAC1997
★★	26	Lamp	CEL1004		61	Grille Assy (WG)	CXA2939
	27	P. C. Board	CNP2094			Grille Assy (EW)	CXA2940
	28	P. C. Board	CNP2093			Grille Assy (ES)	CXA2941
★★	29	Lamp	CEL1115		62	Spring	CBH1215
	30	Housing	CNV2046		63	Door	CAT1187
	31	Lens	CNV2045		64, 65	.....
	32	Half Mirror	CNM2314		66	Screw	BMZ30P100FMC
	33	LCD	CAW1061		67	Holder	

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>
★★	68	IC	TA8215L		109	.....
	69	Heat Sink			110	Cap (WG, EW)	CNS1472
	70	Connector			111	Resistor (WG, EW)	RS1/2P102JL
	71	Connector		◎	112	Tuner Amp Unit (WG)	CWM1848
	72, 73	.....		◎	113	Tuner Amp Unit (EW)	CWM1847
	74	Holder		◎	114	Tuner Amp Unit (ES)	CWM1851
	75	Plug			115	Plug	
	76	Clamper			116	Connector	
	77	Plug			117	Cord Assy (WG, EW)	CDE2303
	78	Connector	CKS1265		118	Cord Assy (ES)	CDE2304
	79	Connector	CKS1257		119	Handle Assy	CXA2944
	80	Plug			120	Screw	CBA1109
	81	Plug		◎	121	Cover	CNS1807
	82	Plug			122	Box	CNB1273
	83	.....			123	Cord Assy (WG, EW)	CDE2300
	84	Connector			124	Cord Assy (ES)	CDE2301
	85	.....			125	Screw	CBA1073
	86	Plug			126	Connector	BMZ30P030FMC
	87	Plug			127	Holder Unit	
	88	Holder			128	Clamper	
★★	89	IC	AN6540		129	Air Cushioned Bag	CEG1053
	90	Screw	BMZ30P040FMC		130	Holder Unit	
	91	Plug			131	Connector	
	92	Holder		★★	129	Switch	CSN-078
	93—104	.....			130	Holder	
	105	Insulator			131	Screw	CBA-172
	106	Screw	BMZ30P060FMC				
	107					
	108	Chassis Unit (WG)					
		Chassis Unit (EW)					
		Chassis Unit (ES)					

1

2

3

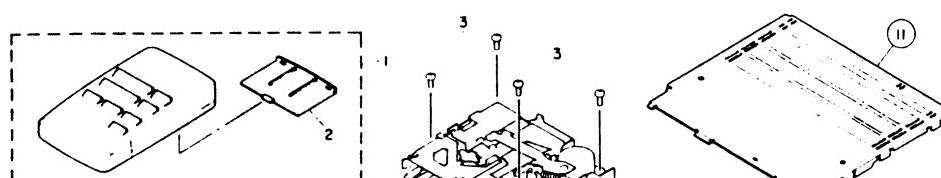
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5

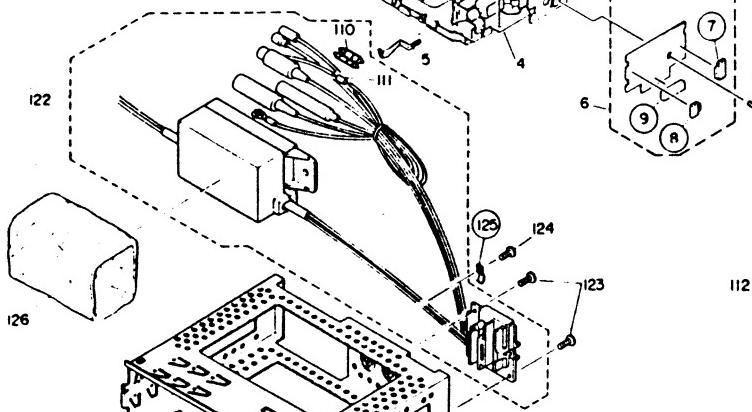
6

• Chassis

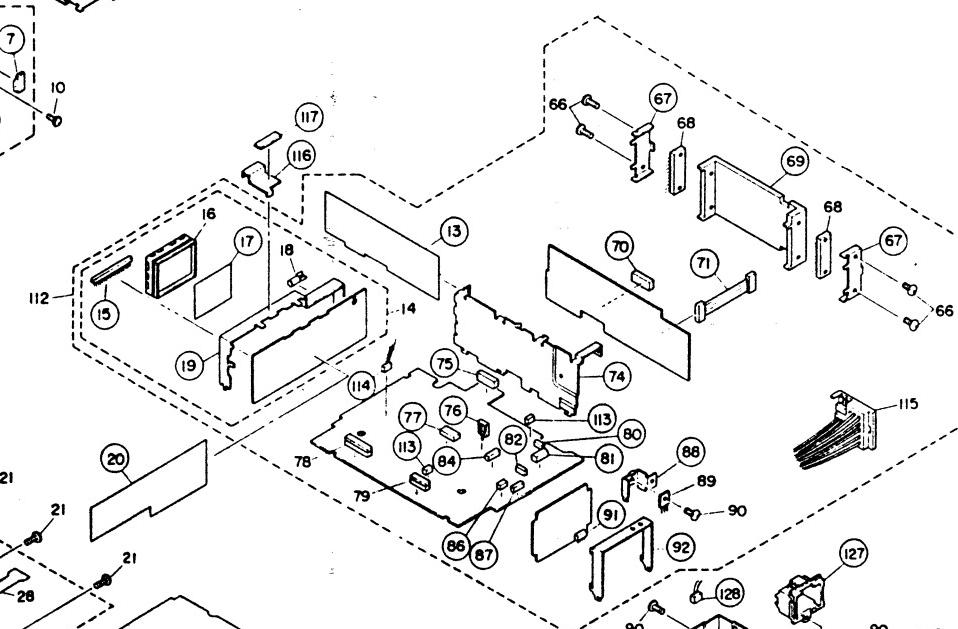
A



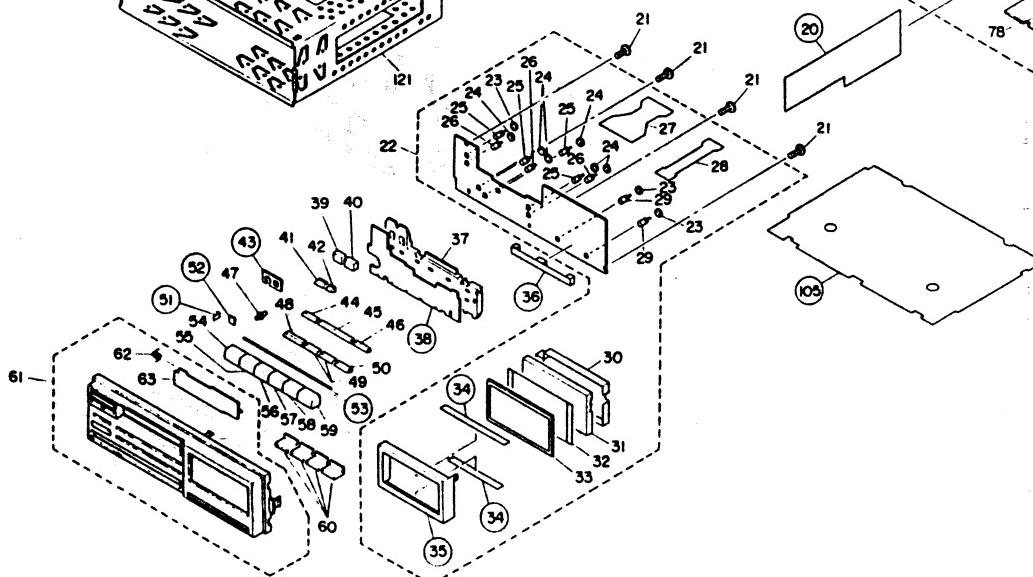
A



B



C



D

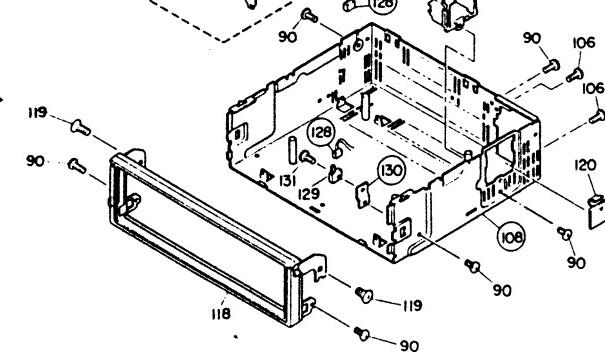
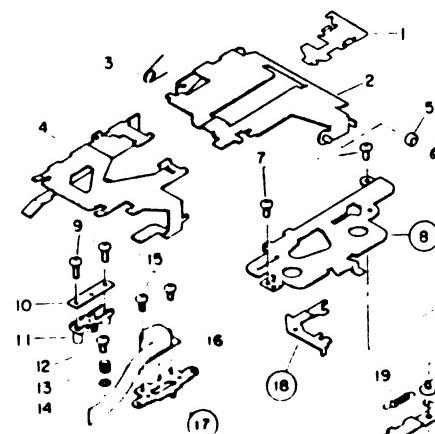


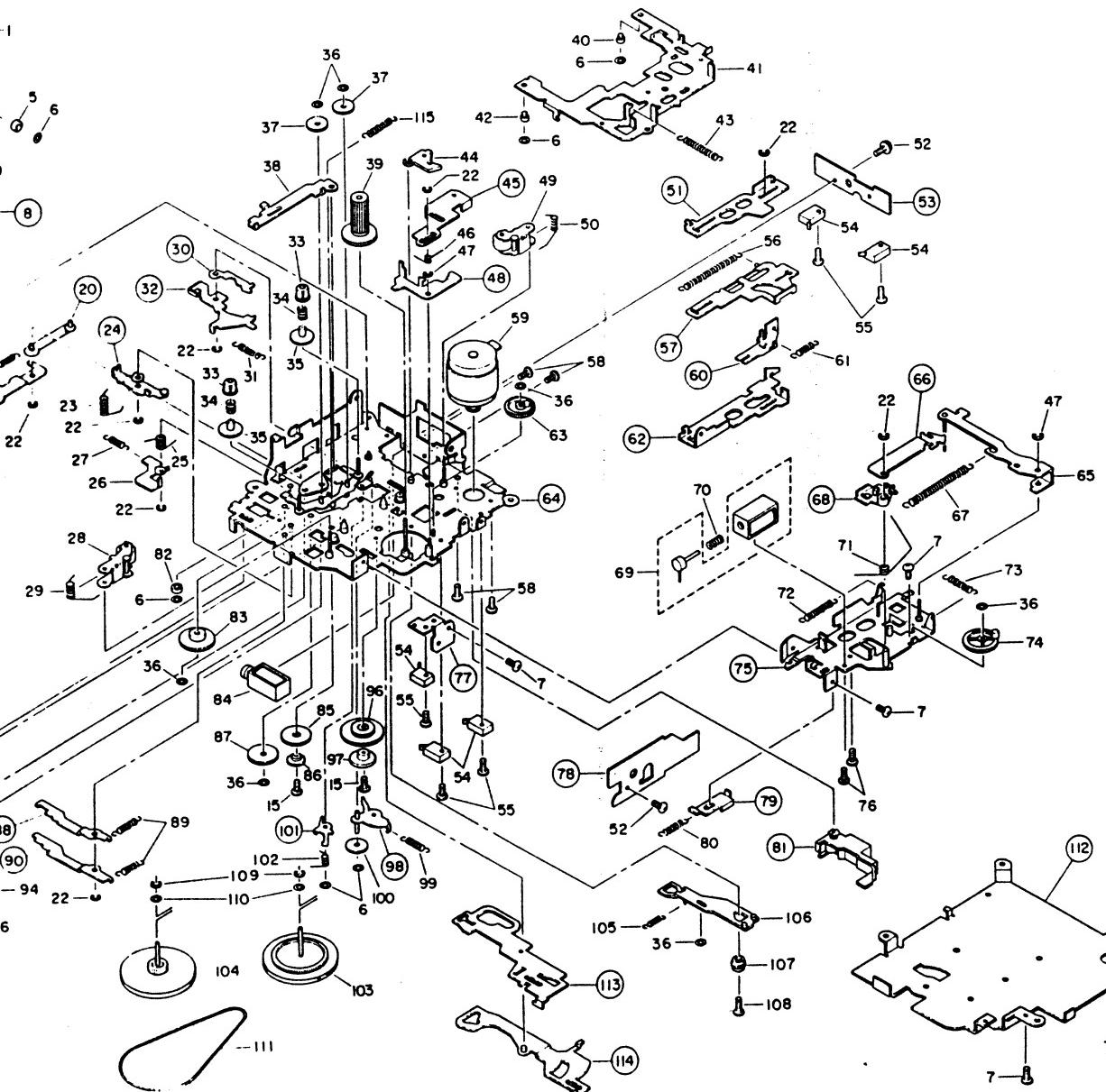
Fig. 19

18. CASSETTE MECHANISM ASSY EXPLODED VIEW

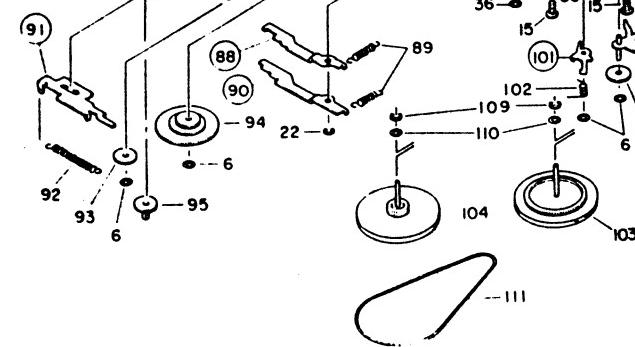
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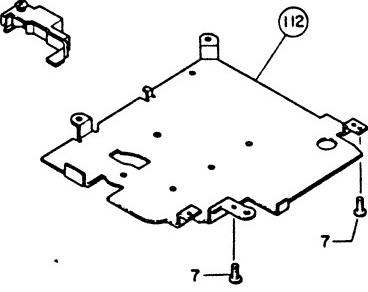
B



C



D



A

B

C

D

• Parts List

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>
	1	Lever	ENV1124		41	Head Base Unit	EXA1071
	2	Arm Unit	EXA1081		42	Roller	ELA1147
	3	Spring	EBH1152		43	Spring	EBH1131
	4	Cassette Holder	ENC1165		44	Arm	ENV1121
	5	Roller	ELA1148		45	Lever Unit	
	6	Washer	CBF1037		46	Spring	EBH1153
	7	Screw	BMZ20P030FMC		47	Washer	YE20FUC
	8	Cover			48	Arm	
	9	Screw	EBA1016	★★	49	Pinch Roller Unit	EXA1072
	10	Spring	EBL1011		50	Spring	EBH1133
	11	Spacer	ENV1105		51	Lever	
	12	Screw	BMZ20P025FMC		52	Screw	CBA1076
	13	Spring	EBH1145		53	P. C. Board	
	14	Washer	EBE1005	★★	54	Switch	CSN1005
	15	Screw	HBA-175		55	Screw	CBA1070
★★	16	Head Unit	EXA1084		56	Spring	EBH1147
	17	Arm			57	Lever	
	18	Arm			58	Screw	PMS20P025FMC
	19	Spring	EBH1143	★★	59	Motor Unit	EXA1089
	20	Lever Unit			60	Lever	
	21	Arm			61	Spring	EBH1149
	22	Washer	YE15FUC		62	Lever	
	23	Spring	EBH1154		63	Gear	ENV1106
	24	Arm Unit			64	Chassis Unit	
	25	Spring	EBH1138		65	Arm Unit	EXA1082
	26	Arm	ENV1122		66	Arm	
	27	Spring	EBH1142		67	Spring	EBH1146
★★	28	Pinch Roller Unit	EXA1073		68	Clamper	
	29	Spring	EBH1134	★	69	Solenoid	EXP1004
	30	Arm			70	Spring	EBH1157
	31	Spring	EBH1144		71	Spring	EBH1151
	32	Arm			72	Spring	EBH1148
	33	Collar	ENV1117		73	Spring	EBH1135
	34	Spring	EBH1155		74	Gear	ENV1118
★★	35	Gear	ENV1116		75	Guide Unit	
	36	Washer	CBF1038		76	Screw	PMS20P022FUC
	37	Gear	ENV1115		77	Bracket	
	38	Lever Unit	EXA1074		78	P. C. Board	
	39	Gear	ENV1107		79	Arm	
	40	Roller	ELA1146		80	Spring	EBH1158

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>
	81	Clamper			101	Arm	
	82	Roller	ELA1149		102	Spring	EBH1140
	83	Gear	ENV1111		103	Flywheel	ENV1127
★	84	Solenoid	EXP1003		104	Flywheel	ENV1128
	85	Gear	ENV1109		105	Spring	EBH1159
	86	Collar	ELA1152		106	Arm	ENV1119
	87	Gear	ENV1110		107	Collar	ELA1150
	88	Arm			108	Screw	HBA-183
	89	Spring	EBH1136		109	E Type Washer	CBG1003
	90	Arm			110	Washer	HBF-179
	91	Lever		★★	111	Belt	ENT1011
	92	Spring	EBH1137		112	Cover,	
	93	Gear	ENV1112		113	Lever	
	94	Gear Unit	EXA1083		114	Arm Unit	
	95	Gear	ENV1113		115	Spring	EBH1139
	96	Gear	ENV1108				
	97	Collar	ELA1151				
	98	Arm Unit					
	99	Spring	EBH1141				
	100	Gear	ENV1114				

19. ELECTRICAL PARTS LIST

NOTE:

- For your parts Stock Control, the fast moving items are indicated with the marks ** and \$.
- ** : GENERALLY MOVES FASTER THAN \$.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/8S □□□J, RS1/10S □□□J

Chip Capacitor (except for CQS.....)
CKS....., CCS....., CSZS.....

Tuner Amp Unit
Consists of
• Mother P.C. Board
• Amp P.C. Board
• Dolby NR P.C. Board

Unit Number :

Unit Name : Tuner Amp Unit

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.	Mark	Circuit Symbol & No.	Part Name	Part No.
**	IC 302		HAI2134	**	Q 706 (KEH-M5000SDK, KEH-M5000B)		2SC2458
**	IC 501		LC7218	**	Q 711 712 714 715		DTB123ES
**	IC 551 552		TA8215L	**	Q 720 725		DTA114ES
**	IC 601		KHA255B	**	Q 722		DTA143ES
**	IC 602		μPC4570C	**	Q 726 727		DTC144ES
**	IC 701		PD4190	**	Q 750		DTA144ES
**	IC 702		S-8053AN0	**	Q 801 (KEH-M5000SDK)		2SD1859
**	IC 703		AM6540	**	Q 802 (KEH-M5000SDK)		2SC2458
**	IC 802 (KEH-M5000SDK)		KHA142	*	D 501		HZS3R0EB2
**	IC 851 (KEH-M5000SDK, KEH-M5000B)		KHA157	*	D 502 551 552 601 623		DAP209S
**	IC 851 (KEH-M5000QR)		KHA158	*	D 504 554 555 556 557 608 621 622 650 702		ISS133
**	IC 852 (KEH-M5000SDK, KEH-M5000B)		μPC4570HA	*	D 505 701 725		HZS5R6JB2
**	Q 501 516		2SC3113	*	D 553		ERCO4-02F
**	Q 502 (KEH-M5000B, KEH-M5000QR)		DTC144ES	*	D 558		HZS7R5JB2
**	Q 503 505 616 619 713 716 717 721 724		DTC144ES	*	D 559		RD2R7ESB2
**	Q 504 506 510 512 515 609 610 618 703		2SC2458	*	D 602 (KEH-M5000SDK) 603 (KEH-M5000SDK)		DAP209S
**	Q 507 508 509 615 718 723 741		2SB1243	*	D 605 607		HZS8R1JB2
**	Q 511 611 614 701 719 740		2SD1859	*	D 606		RD4RTJSB1
**	Q 513		2SK330	*	D 703		ISS277
**	Q 514 (KEH-M5000SDK, KEH-M5000B)		DTC144ES	*	D 704		ERA15-02VM
**	Q 551 552 553 554		DTC343TS	*	D 705		HZS7LC3
**	Q 555 556		2SA1048	*	D 706 (KEH-M5000SDK, KEH-M5000B)		ERA15-02VM
**	Q 601 602		DTC343TS	*	D 707 (KEH-M5000SDK, KEH-M5000B)		ERA15-02VM
**	Q 603 (KEH-M5000SDK) 604 (KEH-M5000SDK)		DTC343TS	*	D 708		HZS7LC2
**	Q 605 (KEH-M5000SDK) 606 (KEH-M5000SDK)		DTC343TS	*	D 710 (KEH-M5000SDK, KEH-M5000B)		HZS6R8JB1
**	Q 612		DTC144ES	*	D 711 714 715 716 717 718 723		ISS133
**	Q 617 (KEH-M5000SDK)		2SC2458	*	D 720 (KEH-M5000SDK)		ISS133
**	Q 702		2SB945	*	D 722 (KEH-M5000QR)		ISS133
**	Q 704 707 742		2SC2458	L	S01 Ferrite-Inductor		LAU2R2M
**	Q 705 (KEH-M5000SDK, KEH-M5000B)		2SB1143	L	S02 (KEH-M5000SDK, KEH-M5000B) Ferrite-Inductor		LAU2R2M

Mark	Circuit Symbol & No.	Part Name	Part No.	Mark	Circuit Symbol & No.	Part Name	Part No.
I 701	Ferrite-Inductor	LAU101K	R 707 709 710 715 737 740 741 744 749	RS1/10S473J			
IB 501		CWW1272	R 708 726	RD1/4PS473JL			
IB 701		CWW1273	R 711 (KEH-M5000SDK, KEH-M5000B)	RS1/10S103J			
IB 702		CWW1274	R 712 (KEH-M5000SDK, KEH-M5000B)	RS1/10S102J			
IB 703		CWW1277	R 713 (KEH-M5000SDK, KEH-M5000B)	RD1/4PS104JL			
IB 704		CWW1128	R 723 745 746 747 748 750	RD1/4PS102JL			
IB 706		CWW1276	R 727 (KEH-M5000SDK, KEH-M5000B)	RS1/10S473J			
IB 707		CWW1049	R 728	RS1/10S124J			
X 501	Crystal Resonator	CSS1030	R 730	RS1/10S272J			
X 701	Crystal Resonator	CSS1023	R 742 743 763 764 765 780 781	RS1/10S681J			
X 801 (KEH-M5000SDK)	Ceramic Resonator	CSS1019	R 754	RS1/10S102J			
** VR 303 304	Semi-fixed 33kΩ (B)	CCP-381	R 755 (KEH-M5000SDK, KEH-M5000R)	RS1/10S102J			
BZ 502	Buzzer	CPV1006	R 761 762	RS1/10S222J			
FM/AM Tuner Unit (KEH-M5000SDK, KEH-M5000B)			R 766 767	RS1/10S682J			
FM/AM Tuner Unit (KEH-M5000R)			R 768 769 770 771 782 783 784	RS1/10S473J			
RESISTORS							
Mark	Circuit Symbol & No.	Part Name	Part No.	Mark	Circuit Symbol & No.	Part Name	Part No.
R 316		RD1/4PS183JL	R 785 786	RD1/4PS130JL			
R 317 318 523 577 623 624		RS1/10S223J	R 801 (KEH-M5000SDK)	RD1/4PS102JL			
R 501 524 537 721 757 758 759 760		RS1/10S222J	R 802 (KEH-M5000SDK)	RS1/10S103J			
R 502		RD1/4PS104JL	R 803 (KEH-M5000SDK)	RS1/10S472J			
R 503 634		RS1/10S393J	R 804 (KEH-M5000SDK)	RS1/10S473J			
R 504 511 576 613 614 627 628		RS1/10S473J	R 805 (KEH-M5000SDK)	RS1/10S222J			
R 509 510 512 521 522 632		RS1/10S472J	R 807 (KEH-M5000SDK)	RS1/10S471J			
R 513 514 515 517 529 530 532 535 543		RS1/10S102J	R 860 (KEH-M5000SDK, KEH-M5000B)	RS1/10S392J			
R 518		RS1/10S681J	R 861 (KEH-M5000SDK, KEH-M5000B)	RS1/10S182J			
R 519 527		RS1/10S152J	R 862 (KEH-M5000SDK, KEH-M5000B)	RS1/10S392J			
R 520 536 571 633		RS1/10S104J	R 863 (KEH-M5000SDK, KEH-M5000B)	RS1/10S182J			
R 526 572 673 635 636 637		RS1/10S103J	R 864 (KEH-M5000SDK, KEH-M5000B)	RS1/10S474J			
R 528 538 702		RD1/4PS472JL	R 865 (KEH-M5000SDK, KEH-M5000B)	RS1/10S474J			
R 531 555 556 565 566 575		RS1/10S471J	R 881 (KEH-M5000SDK, KEH-M5000B)	RS1/10S102J			
R 533 (KEH-M5000SDK, KEH-M5000B)		RS1/10S222J	CAPACITORS				
R 533 (KEH-M5000R)		RS1/10S272J	C 328 329 332	CEA010M50LS2			
R 534 (KEH-M5000SDK, KEH-M5000B)		RS1/10S222J	C 330 331	CEAR33M50LS2			
R 534 (KEH-M5000R)		RS1/10S0R0J	C 333 334	COEA224J63			
R 539		RS1/10S221J	C 335 623 626 851 852 853 854	CEA101M10LS			
R 540 735		RS1/10S474J	C 336 514 519 704 705 707	CEA220M16LS			
R 541		RS1/10S153J	C 501 708 711 720	CKSOYF473Z25			
R 542		RS1/10S183J	C 502 503 504 506 507 508 509 510 511 512	CKSOYB103K50			
R 551 552 561 562		RS1/10S392J	C 505	CKSOYB681K50			
R 553 554 563 564		RS1/10S102J	C 513 601 602 605 606 613 614 624 628	CEA100M16LS2			
R 557 558 559 560 567 568 569 570		RD1/4PS4R7JL	C 515 (KEH-M5000SDK, KEH-M5000B)	CEAR47M50LS2			
R 574 607 608 609 610 611 612		RS1/10S102J	C 516	CKSOYB223X25			
R 601 602		RS1/10S822J	C 517 520	CKSOYB103K50			
R 603 604 733		RS1/10S102J	C 518 553 554 565 566	CKSOYB102K50			
R 605 606 615 616 625 626		RS1/10S203J	C 521	4.7 μF/16V	CCH1005		
R 621 622		RS1/10S113J	C 522 523		CCSOCH270J50		
R 631 642 732 736 751 752 753		RS1/10S102J	C 551 552 563 564	CEHAS4R7M35			
R 639		RD1/4PS471JL	C 555 556 567 568 576	CEHAS470M16			
R 640 722		RS1/10S223J	C 557 558 559 560 569 570 571 572	COEA224J63			
R 641 706 714 725 729		RS1/10S472J	C 561 573	220 μF/16V	CCH1063		
R 643 (KEH-M5000SDK)		RS1/10S473J	C 562 574		CEHAQ471M16		
R 644 (KEH-M5000SDK)		RS1/10S223J	C 575		CKSOYB472E50		
R 701		RD1/4PS270JL	C 577		CEHAS100M16		
R 703		RD1/4PS280JL	C 580 (KEH-M5000SDK, KEH-M5000B)	CKSOYB103K50			
R 704		RD1/4PS152JL	C 581 (KEH-M5000SDK, KEH-M5000B)	CKSOYB103K5G			
R 705 724		RD1/4PS272JL	C 603 604 607 608	CEA4R7M351S			

Mark =====	Circuit Symbol & No.	==== Part Name	Part No.	Mark =====	Circuit Symbol & No.	==== Part Name	Part No.
C 615 616 617 618			CEA100M16LS2	** VR 53	Semi-fixed 150kΩ (B)		VRTB4VS154
C 621			CEA101M10L2	** VR 152	Semi-fixed 6.8kΩ (B)		VRTB4VS682
C 622 627			CEA470M16LS	** VR 153	Semi-fixed 4.7kΩ (B)		VRTB4VS472
C 625			CEA221M10L2		FM Front End (KEH-M5000SDK, KEH-M5000B)	CWB1037	
C 701 702			CEA220M16L2		FM Front End (KEH-M5000QR)	CWB1039	
C 703	3300 μF/16V		CCH1037	RESISTORS			
C 706 (KEH-M5000SDK, KEH-M5000B)			CKSQYF473225				
C 709			CEA010M50L2	Mark =====	Circuit Symbol & No.	==== Part Name	Part No.
C 710	220 μF/10V		CCH1015	-----	-----	-----	-----
C 712			CEA2R2M50LS2	R 5 58 210			RS1/10S682J
				R 6 131			RS1/10S102J
C 713			CCSOCH090D50	R 7 152			RS1/10S223J
C 714			CCSQCH330J50	R 8 10			RS1/10S152J
C 801 (KEH-M5000SDK)	802 (KEH-M5000SDK)		CEA220M16LS	R 9			RD1/4PS151JL
C 803 (KEH-M5000SDK)			CKSQYB103K50				
C 804 (KEH-M5000SDK)			CEAR33M50LS2	R 52			RS1/10S331J
				R 53 57 204 213			RS1/10S473J
C 805 (KEH-M5000SDK)			CEA470M16LS	R 54 103			RS1/10S333J
C 806 (KEH-M5000SDK)			CEA4R7M35LS	R 55 60 215			RS1/10S153J
C 807 (KEH-M5000SDK)			COEA683J50	R 56			RS1/10S123J
C 865 (KEH-M5000SDK, KEH-M5000B)			CEA100M16LS2				
C 866 (KEH-M5000SDK, KEH-M5000B)			CEA010M50LS2	R 59			RS1/10S183J
				R 61 62 101			RS1/10S472J
C 867 (KEH-M5000SDK, KEH-M5000B)			CEA100M16LS2	R 75			RS1/10S474J
C 868 (KEH-M5000SDK, KEH-M5000B)			CEA010M50LS2	R 102			RS1/10S392J
				R 156 (KEH-M5000SDK, KEH-M5000B)			RS1/10S332J
Unit Number :				R 156 (KEH-M5000QR)	157 (KEH-M5000R)		RS1/10S202J
Unit Name : FM/AM Tuner Unit				R 157 (KEH-M5000SDK, KEH-M5000B)			RS1/10S332J
MISCELLANEOUS				R 201			RS1/10S220J
Mark =====	Circuit Symbol & No.	==== Part Name	Part No.	R 202			RS1/10S681J
				R 203 206 214			RS1/10S222J
Mark =====	Circuit Symbol & No.	==== Part Name	Part No.				
** IC 51			LA1140B	R 205 209			RD1/4PS470JL
** IC 101			KHA146	R 207			RS1/10S822J
** IC 201			PA4010	R 208 211 212			RS1/10S103J
** 0 1 203 205	Chip Transistor	DTC124EK	2SC2712	CAPACITORS			
** 0 51 202	Chip Transistor						
** 0 71	Chip Transistor	2SJ1C6		Mark =====	Circuit Symbol & No.	==== Part Name	Part No.
** 0 201		2SK435		C 1 201 209 223 228			CKSQYB103K25
* D 201 202 203 204		ISS133		C 2 3			CKSQYB102K50
* D 205	Variable Capacitance Diode	SVC203-AB		C 51 52 53 54 59 132 203 215 216 219			CKSQYF473Z50
L 51	Inductor	LAU150K		C 55 62			CCSQSL330J50
				C 56 63			CEAR47M50LS2
L 201 (KEH-M5000SDK, KEH-M5000B)	Inductor	CTF1084					
L 201 (KEH-M5000QR)	Ferrri-Inductor	CTF1026		C 57			CKSYB683K25
L 203	Ferrri-Inductor	LAU220K		C 58			CEA010M50LS2
L 204	Ferrri-Inductor	LAU470K		C 60			CCSQSL101J50
L 205	Ferrri-Inductor	LAU4R7K		C 61			CEA4R7M16NPLL
				C 70			CCSQCH200J50
L 206	Ferrri-Inductor	CTF-157					
I 51	Coil	CTC1029		C 103			CEA150M16LS
I 201	Coil	CTB1020		C 105 224			CEA470M16LS
I 202	Coil	CTB1004		C 154			CKSQYB153K25
I 203	Coil	CTB1040		C 159 (KEH-M5000SDK, KEH-M5000B)			CKSQYB183K25
				C 159 (KEH-M5000QR)	160 (KEH-M5000R)		CKSQYB393K25
I 204	Coil	CTE1075					
I 205	Coil	CTE1026		C 160 (KEH-M5000SDK, KEH-M5000B)			CKSQYB183K25
I 206	Coil	CTE1027		C 161			CEA101M10LS
CG 1	Surge Protector	DSP 701M-S008		C 202 212			CKSQYB332E50
CF 51	Ceramic Filter	CTF-102		C 204 208 210			CKSQYB223E75
				C 205			CCSQCN220J50
CF 201	Ceramic Filter	CTF1061					
		(CTF1027)					
CF 202	Filter	CTF1005					
		(CTF-100)					
X 201	Crystal Resonator	CSS1014					

Mark	Circuit Symbol & No.	Part Name	Part No.	Unit Number	Unit Name	
C 206 207		CCSQCH820J50			Display Unit	
C 211		CEA2R2M50LS2				
C 213		CCSQCH470J50				
C 218		CEA2R2M35NPLL	** IC 901			LC7582P
C 220		CCSQCH430J50	** IC 902			BX-1393
C 221		CCSQCH100D50	** S 1 2 3 4 5 6 7 8 9 10		Switch	CS0-255
C 222		CSZA010K35L	** S 11 12 13 14 15 16 17 18 19 20		Switch	CS0-255
C 225		CKSQYB333K25	** S 21 22 23		Switch	CS0-255
C 226		CKSQYF473Z50	** IL 1 2 3		Lamp 14V 40mA	CEL1004
C 227		CEA4R7M35LS	** IL 4 5 6 7		Lamp 14V 40mA	CEL-147
C 229		CEA470M16LS	** IL 8 9		Lamp 8V 60mA	CEL1117
C 230		CEA220M16LS	** IL 10 11		Lamp 8V 60mA	CEL1116
			** IL 12 13		Lamp 8V 60mA	CEL1115
Unit Number :						
Unit Name : Mechanism Control Unit						
MISCELLANEOUS						
Mark Circuit Symbol & No. Part Name Part No. Unit Number : Unit Name						
** IC 1		BA3430FS	C 902			CAW1061
** O 1	Chip Transistor	2SC4116	C 903			RS1/10S102J
** O 2	Chip Transistor	DTC1432U				RS1/10S104J
** O 3	Chip Transistor	DTBL13ZP				RS1/10S470J
** O 4 6	Chip Transistor	2SC3295				CKSQYB223K25
** O 5 7	Chip Transistor	2SB1441JU				
RESISTORS						
Mark Circuit Symbol & No. Part Name Part No. Unit Number : Unit Name						
R 1 2 3 4		RS1/10S104J				
R 5 6 13		RS1/10S181J				
R 7 8		RS1/10S334J				
R 9 10		RS1/10S133J				
R 11 12		RS1/10S183J	** S 1 2		Switch(METAL, PLAY)	CSN1005
R 14		RS1/10S270J				
R 15		RS1/10S823J				
R 16 21 26		RS1/10S473J				
R 17		RS1/10S333J				
R 18 19		RS1/10S224J				
R 20 24 25 29		RS1/10S103J	** S 602		Switch(O/R)	CSH-078
R 22 23 27 28		RS1/10S221J	** HD 1		Head Unit	EXA1084
			** M 1		Motor Unit	EXA1089
			** SO 1		Solenoid	EXP1003
			** SO 2		Solenoid	EXP1004
CAPACITORS						
Mark Circuit Symbol & No. Part Name Part No.						
C 1 2 3 4		CKSQYB391K50				
C 5 6	22 μF/6.3V	CCH1065				
C 7 8 14		CKSQYB103K50				
C 9		CKSQYB152K50				
C 10 12		CKSYB104K25				
C 11	6.8 μF/25V	CCH1066				
C 13	100 μF/6.3V	CCH1067				
C 15 16	4.7 μF/25V	CCH1064				

20. PACKING METHOD

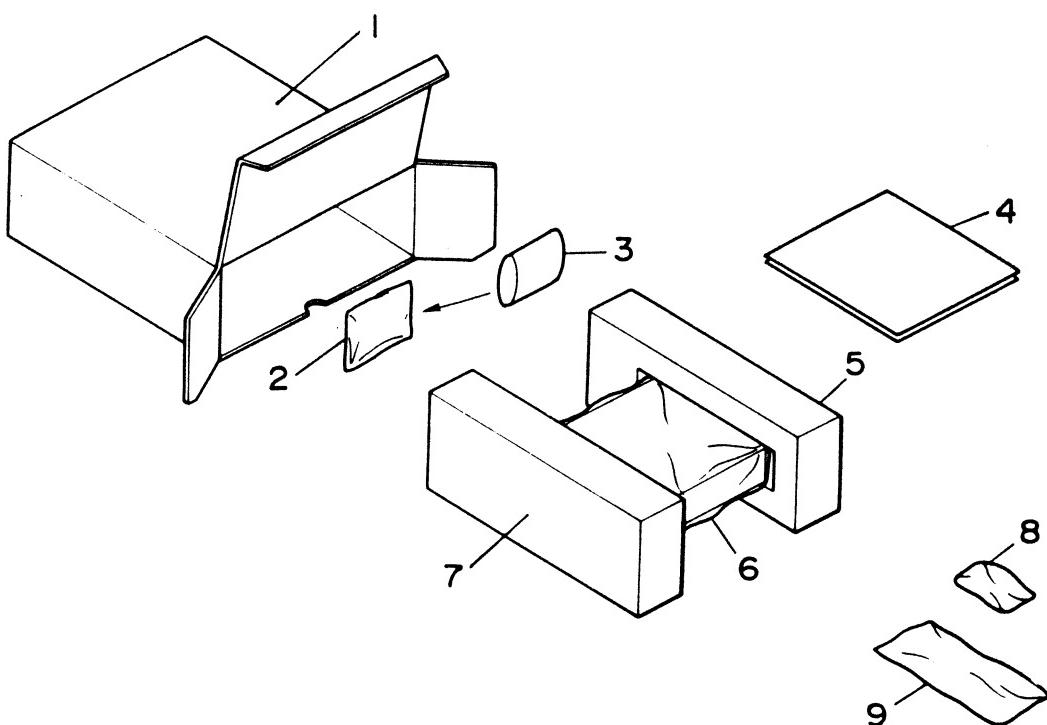


Fig. 21

• Parts List

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>
1	Carton (WG)	CHG1600		7		Styrofoam (L)	CHP1216
	Carton (EW)	CHG1599		8-1		Battery (ES)	CEX1006
	Carton (ES)	CHG1601		8-2		Fastener (ES)	CNM1716
2	Remote Control Assy (ES)	CXA2958				(Rough Surface)	
2-1	Cover (ES)	CZN3224				8-3 Fastener (ES) (Soft Surface)	CNM1717
3	Air Cushioned Bag (ES)	CEG1055		8-4		Battery (ES) (Back Up)	CEX1010
4-1	Owner's Manual (WG)	CRD1294		9		Accessory Assy	CEA1448
	Owner's Manual (EW)	CRD1290		9-1		Cord (x 1)	CDE1289
	(English, French, German, Spanish)			9-2		Bush (x 1)	CNV1009
	Owner's Manual (EW) (Swedish, Norwegian, Dutch, Finnish)	CRD1291		9-3		Strap (x 1)	CNF-111
	Owner's Manual (ES)	CRD1293		9-4		Screw (x 1)	CBA-102
4-2	Caution Card			9-5		Screw (x 1)	CBA1002
4-3	Caution Card (WG)			9-6		Nut (x 2)	NF50FMC
4-4	Card (WG, EW)						
4-5	Passport (WG)						
4-6	Caution Card (ES)						
5	Styrofoam (R)	CHP1217					
6	Cover	CEG-114					